

self in the directing Part of her Gardens ; wherein, by her Knowledge and Management, she has given the greatest Example of Female *Horticulture*, perhaps, that any Nation can produce : Her Green-Houses and Parterres were fill'd with the utmost Variety, not only of all sorts of beautiful Flowers, and the finest and most valuable Greens and Plants that this Climate affords, but also that are to be met with in any other Country whatsoever. And at length she arriv'd to so great a Perfection, that she could challenge any foreign Gardens to produce greater Curiosities than her own. * But, to quit an unnecessary Introduction, and come to the Business I propose in this small Treatise, I shall not give you a particular Description of every Individual Flower you'll find in the Parterre and Flower-Garden ; the Reader must be very sensible that such a Narration would swell this Treatise to a much greater Extent than might be necessary, or well understood ; I shall therefore contract what I have to treat of into the narrowest Compass I can, with a just Regard to the most estimable Flowers, and their exact Management ; and endeavour so far to imitate the former Parts of this Work, as to contain *multum in parvo*. My Subject of Flowers I divide into the three following Chapters ; viz. Chap. I. *Of Earth and Soils proper for Flowers, and the Disposition of the Flower-Garden.* Chap. II. *Of Flower-Seeds and Plants, their Sowing and Culture, &c.* Chap. III. *Of Flower-Trees, Shrubs, and other curious Plants.*

* Her Grace's Gardens at Badminton in Gloucestershire.

C H A P. I.

Concerning Earth, and the most agreeable Soils for Flowers, &c. in general ; and the Disposition of the Garden of Pleasure.

I Have often heard it observ'd by ingenious Florists, and frequently found, by Experience, that sandy Ground is the most agreeable to all sorts of Flowers, it being very warm, and apt for Vegetation ; but if the Sand be predominant, a constant Supply of proper Soils will be necessary for its Support : Therefore the best and most unexceptionable Soil, is a loamy Sand pretty substantial, and of a dark Colour, advantageously mixing with good Mould ; but then it ought to be rather light than heavy, and by no means too moist.

There are many Soils and Enrichments prescrib'd for Flowers, where the Land fails to be of a productive Quality ; and fine strong Mould alone, being well sifted, has a very good Effect ; but for the choicest Flowers, especially when they are rais'd by Seed, a choice Soil must be provided, such as you meet with under Wood-Piles, all sorts of rotten Wood ; and particularly the rotten Dust of a moulder'd old Willow-Tree, is excellent, being mix'd with a good Quantity of well rotted Cow-Dung, and some Sand, if it be necessary ; decay'd Saw-Dust is a good Compost ; as is also a Mixture of a third Part of Brook-Sand, a third Part of well rotted hot Bed-Mould, and a third of Kitchen-Garden Earth.

Where your Land is of a cold Nature, as Clay-Ground commonly is, it is convenient to give it frequent

quent Digings for the benefit of the Sun to meliorate it, wherein throwing it on Heaps or Ridges, with small Channells between, will be attended with the best Success ; and Pigeons Dung, Hens Dung, or Horle Dung, are the best Soils, tho' Lime and Ashes are very good. And where the Ground is of a hot Nature, besides Cow-Dung, the common cooling Soil, Hogs Dung is preferable to any, but this is esteem'd most proper for Fruit-Trees. Sheeps Dung mingled with about four or five Times the Quantity of fine sifted Earth, and both rotted together, or such a Composition of Cow-Dung, is an excellent Soil for almost all Sorts of Flowers and tender Plants, particularly the most fibrous rooted Flowers. A Mixture of Marle, and the Mud of Lakes, or standing Waters is a promising Compost for sandy Land. Rotten Straw, mix'd with Earth, make a pleasing Soil for fibrous rooted Flowers : And the Mud and Sediment of Ponds well chosen, is good for all Garden-Grounds. The several sorts of Soils above-mentioned, ought to be kept entire by themselves in some place of Reserve, usually near Hot-Beds, and there to be so order'd as to be always fit for Use when Occasion shall require.

I have nothing farther relating to the Election of agreeable Soils for the Flower-Garden, and the particular Composts requisite to preserve the same in all Cases in a flourishing Condition, more than to observe, that all Borders, of course, will require to be new made once in about three Years. I shall now treat of the Situation, Disposition, and well laying out of the Parterre, or peculiar Plat of Ground allotted for Flowers.

For Situation of your Garden, endeavour to make such a Choice of Ground, that it may have the Benefit

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nefit of the Air, free and open to the South-East, or East, but the former is moft eligible ; and being fufficiently defended by tall Trees, the Houfe, or diftant Hills, from the Northerly Winds, wherein lofty Trees, tho' at a Diftance, will very much break the fierceft Blafts. And if the Land in the Country where you are obliged to erect your Garden, be generally cold or moift, you'll be under a Neceffity of choofing your Ground declining or fhelving towards the Sun, which is the beft Pofition, and will facilitate the Growth of Trees, Plants, and Flowers, being naturally drain'd of its immoderate Moifture by its Situation, and thereby render'd very healthful and fertile. I prefume I have no Occafion to put the Gentleman in Mind of fixing his Garden near fome River or plenteous Springs of Water, which (befides the Improvement that Elements affords to the Lands) fo eminently improves the Beauty and Glory of the Garden.

The great Variety of Forms and Plants of Gardens, that might be drawn and reprefented, and the working part of them, I leave to the practical *Gardener*, whose immediate Bufinefs it is ; and fince it would be no fmall Difficulty to prefcribe Rules in a cafe where Fancy entirely governs, and every Builder is moft capable of pleafing himfelf, I fhall therefore be contented with the fmall Scheme I have given in the Front of this Treatife, and the following fhort Explanation of it, *viz.* You are no fooner out of the Houfe, but you are in a Walk of *Orange-Trees*, whose fragrant Smell, efpecially in the Blooming Season, excels that of all other Plants and Flowers ; from thence you proceed to Grafs-Plots and Squares, fill'd with the moft beauteous Greens, and Borders fet off with the moft delightful Flowers. From thofe Entertainments, you advance to a Fountain, of the
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best Architecture: From thence you come to other Grass-Plots of various Forms, fine Greens, and beautiful Flower-Hedges; with the Addition of an excellent contriv'd Statue, representing *Flora*; from whence you enter a well-form'd flourishing Wilderness; and being no longer pleas'd with a solitary Amusement, you come out into a large Road, where you have the Diverſion of ſeeing Travellers paſs by, to compleat your Variety.

This is the Deſign of my Print prefix'd in the Front, to which I ſhall add my Intentions, in Reſpect to Seats and Out-door Edifices; at each End of the *Orange-Walk*, I would have an arch'd Seat, equal in Wideness to the Walk, *to wit*, about eight or ten Foot; theſe Seats would not be a little pleaſurable, as an immediate Reſort from the Houſe. The next Thing I would do, ſhould be to erect ſmall Seats of a Size, fit to receive two or three Perſons, to be plac'd on each ſide the Garden, at the Termination of the Croſs-Walks; then, for cool Recesses, there's no Part of the Wilderness, but might with Facility, and for a trifling Expence, be converted into a moſt commodious Arbour; and that I might be perfectly retir'd, in the Middle of each Square of the Wilderness, or of two of them at leaſt, there ſhould be a large Elm or Fir, with a ſmall Seat enclosing the Body thereof, and the Ground open in a Grass-Walk, for about the Space of ſix, ſeven, or eight Foot, &c. round, according to your Room, having a very narrow and almoſt conceal'd Entrance from the Walks; and for more publick Uſe, there might be large Trees planted in the Center of the Wilderness, with ſmall Seats erected round them likewise; theſe Seats, with one or two ſmall moveable ones, of a Size to contain one Perſon only, and a ſmall Pleaſure-Houſe erected at one Corner of
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the Wilderness, under the Wall, opening to the Walk of the side of the Garden, to resort to in wet and unpleasant Weather, or upon any other Occasion; with a small Edifice on the other side the Garden, at the other Corner, of the same Extent and Form of the Pleasure-House, and answering to the same, as a Conservatory for your fine Greens in the Winter, and for the keeping of the *Gardener's* Untenils; with the Addition of some high Mount, or exalted Terras-Walk, near, for the Enlargement of Prospect, would compleat a Garden, to the Satisfaction of the most Curious.

In Respect to the laying out, and proportioning of Gardens in General, I shall advance very few Rules; the Reverend Mr. *Laurence* having very handsomely descanted on this Subject. The Extent of your Garden always determines the Extent of your Walks, Parterres, Grass-Plots, &c. if your Garden be large, of Course they must be large too; and if small, of Consequence they must be small likewise: But to give one Example, A Garden, or rather a Parterre, of seventy Foot every way, will require the Squares, or Grass-Plots, to be about twenty five Foot square, calculating four Squares for the Disposition of the Ground; the middle Walk may be about six or seven Foot wide; and the side Walks about four Foot each; which, with the Borders under the Walls, will employ the whole Ground: Each of these Squares may very well receive nine fashionable Greens regularly dispos'd, such as Pyramid *Eughs*, round-headed *Laurels* and *Bays*, silver Pyramid *Hollies*, *Junipers*, &c. the Borders being fill'd up between with the most odorous and beautiful Flowers: And by this Proportion may a larger or smaller Plot of Ground be laid out.

Having

Having given you the Dimensions of a small Garden of Pleasure, I have only to observe, that it is most uniform to make the Entrance into your Garden out of one of the most magnificent Rooms in your House, or very near the same; and to preserve that Entrance from common Use, you may have some other Door into your Garden for Gardeners, Labourers, &c. and let your principal Walk extend it self as far as you can, directly from your House, adorn'd with the choicest Plants for Beauty and Scent, wherein, the longer the Walk is, the larger are the Plants to be, and the wider in Extent the Gravel-Walk.

The Method of making Gravel-Walks, is obvious to all Persons of the least Knowledge in Gardening; I shall therefore make no Mention of it, only caution the Gentleman to have the good Soil remov'd for a sufficient Depth, before the Gravel be laid, otherwise the Walks will be fill'd with Weeds not easily to be eradicated; and the most successful Method for the Preservation of your Walks from Weeds, is to dig them up, on the Approach of Winter, and let them lye fallow in high Ridges 'till the Spring, and then repeat the Digging, and new lay them down, they'll be secure from Weeds the whole ensuing Summer.

C H A P. II.

Of Flowers, the Seeds, and their Sowing and Planting Abroad; with their particular Management.

I Come now to the particular Flowers, wherein it is necessary to **premise**, that your Garden ought to be well dug three **Times** over, before you commence

commence your Plantations; the first Time in *September*, the second Time in *November*, and the third Time in the *Spring*. Your Flower-Garden being so prepar'd, and well soil'd with the Composts before recommended, where requisite; I proceed to the Flowers themselves, and their particular Management.

All Flowers are rais'd either by Seeds, or Off-sets and Layers. The Flowers rais'd by Seeds, are the following; The *Tulip*, *Carnation*, *Auricula*, *Crocus*, *Crown-Imperial*, *Flower-de-luce*, *Jacinth*, *Narcissus*, *Honey-Suckle*, *Bell-Flower*, *Anemone*, *Cardinal-Flower*, *Cyclamen*, *Lady-Smock*, *Fraxinella*, *Star-Flower*, *Flower of Bristol*, *Sun-Flower*, *Daffodil*, *Sweet-William*, *Pink*, *Saffron*, *Piony*, *Gilliflower*, *Primrose*, *Oxslip*, *Cowslip*, *Violet*, *Madder-Sweet*, *Nightshade*, *Moly*, *Cistus*, *Spanish-Broom*, *Hellebore*, *Dasie*, *Liverwort*, *Sweet John*, *Lychnis Chalcædonica*, or *Nonsuch*, *Sow-Bread*, *Bears-Ear*, *Asphodel*, *Hepatica*, *Amaranthus*, *Nerstertian*, *Marvel of Peru*, *African*, *Red Sattin Flower*, *Larks Heel*, *Snap-Dragon*, *Double Poppy*, *Fox-Glove*, *Columbine*, *Indian Cresses*, *Double Holliock*, *Lupine*, *Fennel-Flower*, *French Marigold*, *Bind-Weed*, *Sweet Basil*, *Sweet Marjoram*, *Scarlet Bean*, *Candy-Tuft*, *Everlasting Pease*. These Flowers, or Plants, are many of them of more than a Year or two Years Duration; and not a few of them may, with equal Success, be rais'd from Layers, Slips, Cuttings, &c. as will appear in my particular Description of them, and the following Account of Flowers rais'd by Off-sets, &c.

The Flowers which are commonly rais'd and increas'd by Off-sets, are, *Anemones*, *Ranunculus's*, *Corn Flags*, *Flower-de-luces*, *Lillies*, *Peonies*, *Hya-cinths*, *Lilly-Asphodels*, *Persian Lillies*, *Star-Flowers*,

Flowers, Crown Imperials, Bulbous Violets, Tulips of all Sorts, Molies, Martagons, Spider-Wort, Auricula's or Bear-Ears, Daffodils, Gentianella's, Meadow Saffron, Primroses, Oxslips, Wolf-Bane, Crocus's, Fritillaries, Campanella's, &c. Other Flowers and Flower-Trees, Shurbs, &c. raised by Layers, are, Pinks, Carnations, Gilliflowers, Roses, Jassemins, Woodbines, Virginian Bower, Shrub Spirea, Hipericum Frutex, Shrub Nightshade, St. John's Wort, Shrub Mallows, Spirea Frutex. And to compleat the Catalogue of Flowers and Plants, increas'd by Slips, Cuttings, &c. there are the Pomgranate-Tree, Southernwood, Arbor Vitæ, Rosemary, Sumach, Pipe-Tree, Campion, Marjoram, Lavender, Bastard Sena, Mustich, Trefoil, Non-such, Guelder Rose, Thyme, Campions, Dogs-Tooth, Sage, &c. I come now to my particular Description of the several Flowers, and their Culture; and begin with the Tulip.

The TULIP.

The *Tulip*, which Historians tell you was originally but a Hedge-Flower, at this Time deservedly claims the Preference of all bulbous-rooted Flowers, and yields so great a Variety, that it would tire the Patience of the Reader to enumerate them; tho' in admiring their various Colours and excelling Beauties in the nice Collection of ingenious Florists, none can be fatiated: But as their Glory is great, so they soon decay, not any of them continuing above ten Days in their full Lustre, without some artificial Shade for their Preservation, or the Weather's being more than ordinary kind.

There are three sorts of *Tulips*, in general, viz. the *Præcoces*, *Medias*, and *Scrotime*; to wit, Early, Middle,

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Middle, and Late-flowering *Tulips*. The Ground you plant them in, ought not to be too rich, for the Richness of the Earth causes them to run into dark and plain Colours; and some advise a natural Earth impoverish'd, in some Degree, with Sand, as agreeable; and where the Soil is too luxurious, you may abate it by laying a Bed of sandy Earth, about the Thickness of your Finger below the Bulb, which will give a Check to the quick Vegetation of the Root: But the vulgar Field or Hazle Earth, with a small Compound of Sand, is approv'd beyond any Soil whatsoever; and digging the Ground where your *Tulips* stood, is very beneficial to the Soil; some affirm it to be equal to a Change of Mould.

The Season for Planting of *Tulips*, is the latter End of *September*, or Beginning of *October*, being taken up by the latter End of *June*, Beginning and latter End of *July*, about six Weeks or two Months after their Blowing; it being pernicious to let a *Tulip* stand too long after it has blown, by Reason it weakens the Root: Make the Beds to lodge them in, of fresh, light, sandy, sifted Earth; a Foot deep, and a Yard square, will contain thirty Roots, being regularly dispos'd, so as to have two Flowers of the same Colour together, and set three or four Inches deep, unless it be those design'd for Seed, which it will be necessary to sink two Inches lower. When you take up your *Tulip*-Roots, (the proper Time for doing whereof is when the Stalks are dry'd down and decay'd) lay them upon Papers in the Sun for the Benefit of drying, and afterwards remove them to Boxes, or a dry Room not expos'd to the Sun and Wind, and let due Care be taken that they do not moulder; and if any of them are in a languishing State, which may be discover'd by their being shrivel'd, they may be recover'd by being wrap'd up in Wool dipt in Sallet-Oil, and plac'd at an agreeable

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greeable Distance from a moderate Fire; dry Sand, Soot and Turpentine are good Remedies for a diseas'd Root in the Ground.

The greatest Variety of *Tulips* are rais'd by Seeds gather'd in a dry Time in the Month of *July*, or thereabouts, according to the Season. The only Direction necessary to know when it is ripe, is the opening of the Pods, which they will most certainly do, and the Stocks at the same Time wither: When you have cut the Stalks, tye up the Pods of each Sort separately to the Bar of a Sunny Window, which will perfect the Ripening of the Seed; let them there remain 'till about the End of *September*, the Time of Sowing, and then separate the good Seed from the Chaff; which do by putting the Seed into a Vessel of Water; for that which sinks is undoubtedly good, and fit to be chosen; and this may serve as a general Rule for the Election of all Sorts of Flower-Seeds, but is not to be experimented till just before Sowing. These Seeds are to be sown properly in Boxes, being about six Inches deep, fill'd four Inches full of the finest sifted Mould, light and rich, and not too sandy; and a little Watering will be convenient on the Approach of *March*; and I suppose I have no Reason to caution you not to sow your Seed too thick. 'Twill be three or four Years at least before the Seeds thus sown, will begin to produce Flowers; but they are to be taken up annually in the same Manner as the *Tulip*, when the single Leaves they produce are dry'd down or wither'd, and to be planted again the latter End of *August*; but on every fresh Planting, you must observe to increase the Richness of the Soil, tho' common Rubbish sifted (Mr. *Bradley* tells you) has been experimented the best Soil for their first Plantation, to promote a fine Variegation in the Flower.

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The small Cions or Off-sets of *Tulips* you may plant in a Bed by themselves ; and the often removing or transplanting of *Tulip*-Roots and their Off-sets, into various Ground well dug and loosen'd, gives a great Increase, and no small Variety of Colours ; tho' the most ordinary Sort of *Tulips*, if the Earth be naturally good, may remain two Years in the Ground. For the Preservation of your choice *Tulips*, when they begin to blow, you may erect Tilts of Cap-Paper on pretty strong Hazle Rods, to be us'd for their Defence in the Night, and at other Times, for their Preservation from Winds, Hail, and extream Heat. When you plant your Roots, stick into the Ground by them small Sticks mark'd with the Numerical Letters ; which Marks may be inserted in a small Book in Alphabetical Order, with the Addition of the Name of the Flower, so that you may readily find out every individual Flower, and be under no Difficulty to call them by their proper Names. The *Fritillary* is near of Kin to the *Tulip* ; they are of a white, yellow, red, and dark Colour, and some of them checquer'd ; from whence they are entitled *Checquer'd Tulips*. Their Seasons and Management is not unlike that of the *Tulip*, only the dry Roots are to be interr'd about the Beginning of *August*.

The early *Tulips* flower in *March* and the Beginning of *April* ; the middle Sort in *April* and the Beginning of *May*, and the late *Tulips* flower all the Month of *May*.

The CARNATION and GILLIFLOWER.

Of these Flowers, there is no less Variety than of the *Tulip*, and they are the Pride of the Summer, as *Tulips* are the Glory of the Spring : They consist chiefly

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chiefly of these four Sorts ; Red and White, Crimson and White, Purple and White, and Scarlet and White, and tho' the Colours are not many, they are variously compounded : The single Colours are but little esteem'd, the strip'd, fleak'd, or powder'd upon White and Blush, with darker or lighter Red, the Crimson, ladder or brighter Purple, deeper or paler Scarlet, are accounted the finest Colours. The choicest Flowers are as follows : Of the Red and White are, *Crown of Bohemia, Emperor, Charles the Second, Queen Catherine.* Of Red and Blush, *William the Conqueror.* Of Crimson and White, *the Empress, the Countess, and Thisbe.* Of Purple and White, *the Solomon, Prince William, Purple-Imperial, Orlinans, Fair Helena, Glory of Worcester.* Of Scarlet and White, *the Giant, Mayor of London, Romulus, Fair Roxana, Florida, Paramour.* Of deep Clove-Colour and Black, *Pluto.* Of Scarlets, *Golden Grove, Prince and Princess of Orange, the Golden Fleece.* Of Blush, *the Aurora, Morning-Star.* Of Cloves, *the Giant Clove, Birtha, Astragon.* Of Purple, *the Wiggon.*

The Soil for these Flowers ought not to be either too stiff, or over-light ; fresh Earth from Ground that hath lain a long Time untill'd, is the most agreeable common Soil : a very good Compolt, is one Load of well consum'd mellow Earth, and two Load of sandy Loam meliorated and sifted ; and the Earth of Mole-hills, being not long cast up, mix'd with a third Part of Cows-Dung or Sheeps-Dung, well digested and mellow'd, is a compound Soil, preferable to any, tho' rotten Tan, having lain three Months to sweeten, and being converted to Earth, adding to it four times the Quantity of Woodpile Earth, and the Rubbish of old Walls, or a little decay'd Lime, is esteem'd excellent : And Pigeons Dung laid

to the Roots of your *Gilliflowers*, effects a more early Blooming than usual.

Carnations and *Gilliflowers* are propagated by Seeds, Layers, and Slips; but, as in the Case of *Tulips*, the Seeds afford the greatest Variety of Colours, for they annually produce new Mixtures, I shall begin with the Layers. *June and July* are the best Months for laying your Flowers, and some Part of *August* will do tolerably well. The Method in doing whereof, is this; first trim the Slip you intend to lay, being strong and well chosen; then with a sharp Pen-knife cut a Tongue, half through from one of the middle Joints under the Slip, to the next Joint towards you, beginning next the Root, and cutting upwards, loosen the Earth under it, and with a small hooked Stick force it down, that the Tongue or Slit may open, and the End of the Slip point upwards; cover it with Earth, and water it, which must be repeated as the Season requires. Your Layers being so manag'd, about a Month after, or at farthest by the Beginning of *September*, they will have taken Root, when you may venture to take them off with some of the adhering Earth, and plant them in Pots, or other Places prepar'd for them; but if they should not then have taken Root, as it may sometimes happen, you are to new lay them, and let them remain 'till the Spring. Plant not your Layers too deep, a deep Plantation being always destructive; and many Persons have purchas'd this Experience at a dear Rate.

The Time of slipping this Flower, is in the Months of *February* and *March*; and some Writers affirm both Spring and Autumn to be good Seasons for making out Roots; in the latter, the Slip being set in Time, to take Root before the severity of the Winter approaches; and the former, the Slip set in
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the Spring, having Time to take Root before the Sun rises to that Strength to omit violent Heats. The Slip chosen, ought not to be twisted in the Bottom, as many Persons practise ; it need only be cut off at the Joint.

The Season for sowing the Seeds of this Flower, is *April*, after a Shower of Rain: Let them be sown thin, on a Bed of good fresh Earth, which receives the Benefit of the Morning and Evening Sun, but shaded at other Times of the Day, and the Ashes of old decay'd *Gilliflowers*, sifted thin over them, will cause a speedy Vegetation ; for want of which, you are to sift other fine Earth over them. In *August* or *September* the Plants will be arriv'd to a proper Growth for their planting abroad; when they are to be carefully remov'd into Beds of very good Soil, and there remain 'till they flower, which may be the Year after. The Seeds which produce the greatest Variety of Flowers, are the strip'd Tawnies, tho' the greatest Diversity of double Flowers are rais'd from the Seeds of such double Flowers.

When you take up your Layers, either in *September* or *March*, (the proper Times for doing it) cut off all the dead Leaves, and the Tops which are too long, and take them up with Earth about the Roots ; then set them in your Pots with the Earth before prescrib'd, and place them for some Time in the Shade, giving a gentile Watering, and they'll grow to your Satisfaction ; when they may be remov'd into the Morning Sun, the only Sun these Flowers delight in. In the Watering observe to use Water that hath stood at least two Days in some Vessel a Sunning ; to which you are to put some Sheeps Dung, or Cows-Dung, to enrich it ; for these fine Plants, and for your large Plants, that require Heat, Horse-Dung will serve.

Rivers that receive much Soil, is very good Water for all sorts of Plants; but Well-water and River-water, that runs quick on sharp Gravel, are by no Means good for watering; neither is your stinking Ditch-water, or Rain-water, that has stood too long. And in the Winter, 'till *April*, water in the Morning, and after that Time, on the Increase of the Sun, it is convenient to water in the Evening; which Method is to be observed in watering all Manner of Flowers.

Your Flowers and Layers thus manag'd, when they begin to shoot up, if any of them happen to have but one Stem or Stalk without any Layer, it is Prudence to cut off the Spindle, that it may sprout a-new, for the Preservation of the Root; which will otherwise be in inevitable Danger, especially if you suffer it to blow. And when your Flowers begin to spindle, nip off all but one or two of the strongest at each Root, and as they come to bud for flowering, nip off the Buds likewise, all but three or four that are best dispos'd; by which Means your Flowers will not only be the fairer, but the more good Layers gain'd: And as the Spindels increase in Height, for their Support, you are to tye them to small Rods made for that Purpose; some few whereof, for your best Flowers, may be painted of a Green Colour, with round Knobs gilded at the Top, which will be very ornamental. When any of these Flowers in your Pots die, it is necessary to empty out the old Earth, and to replenish your Pots with new Mould, for the Nourishment will be drawn out and spent by the first Flower; And once in two Years at least, the Earth about *Gilliflowers*, ought to be renewed.

Three or four Layers are a sufficient Number for any one Root; more would draw away too much
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of the Nouriture ; and if you happen to have any Flowers that are broken, you may graft others on them that are more choice, in the most woody part of the Stalk. Intemperate Heat is prejudicial to *Gilliflowers*, for they delight in an open Air; tho' windy Weather, and driving Rains are very pernicious; to prevent the Consequences whereof, a Pit or Place dug in a round Form, and sunk like to a little Pond, planted round the Edges at Top with small Pyramid *Eughs*, is not only a convenient, but ornamental Preservatory : And your Flower-Pots ought to have Holes in the Bottom, to let out the superfluous Moisture, which would otherwise annoy your Flowers.

These Flowers blow in *July* and *August*, and some early Buds may yield Flowers in *June*, as the latter Buds may not flower 'till *September*. The right *Dutch* Flowers, which are the nobler Sort of them, seldom produce Seed here ; but when they do, you are to preserve it dry 'till it is ripe, then gather it, and lay it by in the Husk, until the Spring ; and the latter End of *May* is your proper Season for sowing it.

The *Pink* and *Sweet-William* are near of Kin to the old *English Carnation*, and are raised by Slips like unto the *Carnation*. The common red single *Pink* makes a most beautiful Edging to Borders ; and when in Flower, its odorous Scent perfumes the whole Garden ; or they make a very agreeable Figure being planted in the Borders in Spots or Tufts.

The AURICULA's, &c.

Auricula's or *Ear's Ears*, are the most beautiful Ornaments of the Spring ; and, for their Size, are the greatest Rarities in *Flora's* Cabinet ; they are
divided

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divided into these five Sorts of Plants, the *single Sort, self-colour'd, single strip'd, double self-colour'd,* and *double strip'd Flowers*; the finest Colours are the *Purple strip'd, Liver-Colour* and *Yellow, Sky-Colour* and *White*, the *double White, double Yellow,* the *double strip'd Crimson* and *White*, the large *double Purple* and *Yellow*; the two last whereof, I am inform'd, have been sold from five to twenty Pounds each Plant; and the *Windsor Auricula* is esteem'd by some the most splendid of all the rest.

These flowers delight in a rich Soil well shaded, but by no Means under Trees: The best Compost for them, is decay'd Neats-Dung, Flood or Brook Sands, and Willow-Earth mix'd and sifted to a fine Composition of Mould. Your Earth being prepar'd, I come to the Seeds by which they are rais'd: You are first to prepare Boxes of eight or ten Inches deep, to receive your Earth, (which are to be got ready the latter End of *August*;) and about the first of *September* is the proper season for sowing, wherein let your Earth be a finger thick at the Top, at least, of fine sifted Willow-Earth, or dry'd Cow Dung beaten small, and mix'd with light Earth; and sow your Seeds mix'd with Wood-Ashes; and when sown, let the Seed be covered with the same Mixture of Earth sifted thereon; or you may sow your Seeds without covering them with any Earth, waiting for a small drizzling Rain, which will drive the Seeds as far as is necessary into the fine sifted Mould, and very much facilitate the Vegetation; but you are to take this Caution with you at the same Time, that the Seed will thrive better with too much Covering, than none at all. Your Seeds thus sown, let them stand all the Winter in a free Air, and in the Sun, 'till the Beginning of *April*, when they are to be remov'd into the Shade, for then they'll begin to
D 2 spring,

Spring, and the least Heat of the Sun destroys them : Let them continue so posited 'till they arrive to a considerable Bigness for their transplanting, giving them gentle Waterings : When you transplant them, be sure let the Ground be rich and good ; and they may be set from half a Foot to a Foot assunder. They will yield Flowers some the *August* following, others not 'till the next succeeding Year.

The best Flowers are set in Pots or Boxes, that they may be shifted in the Summer into the shade, and in the Winter into the Sun ; they delight in the open Air, and endure the Cold of the Winter very well, (but not the wet Weather) being often removed, once in two Years at least, if not every Year, and the Ground enrich'd, otherwise they will decay ; and the *strip'd* and *double* sorts are to be removed oftener. These Flowers are likewise increas'd by taking them up towards the latter End of *August*, and parting the Roots, planting them again presently in good fine sifted Earth, and at a pretty good Distance ; and this Method of Propagation gives less Trouble than that of sowing the Seeds.

They flower in *April* or *May*, and some of them again in the Month of *August* ; but if they offer to blow late in the Autumn, it is prudent to crop the Buds, which will cause fairer Flowers in the Spring. There are some *Cocksips* worthy Place in your Garden, for which the same Management will serve as for the *Auricula* ; and the best Sort of *Primrose*, viz. the *double Scarlets*, are likewise entertain'd for their early Lusture in the Spring.

The A N E M O N E.

This Flower is call'd the *Wind-Flower*, it being observable that it never opens but when the Wind blows,

blows, and is one of the greatest Beauties in the Season that it flowers. There are great Variety of these Flowers, tho' they are commonly mark'd with but two Distinctions, *Anemone Latifolia*, the double *Anemone* with broad Leaves; and the *Anemone Tanuifolia*, the single *Anemone* with narrow Leaves; whereof the latter are more valu'd than the former. The Soil agreeable to *Anemones*, is a rich sandy loamy Earth, manur'd with Neats-Dung and a little Lime well digested; to which you may add some well-rotted Sheeps-Dung, and the whole is to be sifted thro' a Wire Riddle. About the latter End of *September*, or Beginning of *October*, you are to plant abroad your *Latifolia*'s in a Bed made a Foot deep, rather shady than too much expos'd to the Sun, about half a Foot asunder, and three Inches deep; and about a Month after your *Tanuifolia*'s are to be planted. If you are fond of having them more early than usual, and consequently the greater Rarity, you are to plant them sooner, and to secure them with Mats from the Cold and Frosts, which are very pernicious, and to give them all Assurances of the Sun and warm Rains; and if you are desirous to have them late, you may keep some of them out of the Ground until *February*, and plant them at that Time.

The broad-leav'd *Anemones* will come up before Winter, and the narrow Sorts about the End of *February*, sooner or later, according to the Seasonableness of the Spring. If *March* and *April* prove dry Seasons, they will require frequent gentle Waterings, but much Wet is very destructive; and an artificial Shade erected for the hottest Time of the Day, in a Season of Heat, will advantage the young Flowers. A thin Layer of rotten Sally-Wood, or Willow-Earth, very much forwards the Growth of *Anemone* Roots, being put under them at their first Transplanting;

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ting ; and steeping the Roots in warm Water, will contribute to their Vegetation. About the End of *June*, and in *July*, is the Season for taking up the Roots, or sooner, if the green Leaves turn yellow before that Time : Preserve the Roots in a cool dry Place, 'till the Season comes for their Plantation ; or you may keep them in Sand for a Month, and afterwards put them in Papers, and keep them 'till the Time of their Interment.

The Seed of these Flowers will be ready to be gather'd about *May* ; and the *Latifolia* Seed being sown in proper Earth, yields a pretty Variety. The Time of sowing *Anemone* Seeds (which you may do either in Beds or Boxes) is the Month of *July*. When you sow them, take Care that they be not too thin ; and after they are sown, you are to sift Earth upon them about half an Inch in Thickness, and water them a little, which you are to repeat as there may be Occasion, and as Discretion shall lead you. A Month after they are come up, sift more Earth over them, and cover them with Mats or Pease-Haum, supported and born up, all the ensuing Winter ; the *August* following, you may remove them into convenient Beds of well prepar'd fresh Earth, there to remain 'till they bear Flowers, which some will produce the Year following, but not all of them 'till the third or fourth Year.

Anemones usually flower in *March*, *April*, and *May*.

The R A N U N C U L U S.

The *Ranunculus*, or *Crow-foot*, is no less beautiful than the *Anemone*, and carries such a Lustre and Richness in their Colour, that it is by no Flower exceeded : And as it bears a near Resemblance to the *Anemone*, so it differs very little in the Ordering and Manage-

Management, only this requires a richer Soil. These Flowers are increas'd by parting the Roots about *Midsummer*, when the Stalks are dry ; and they are to be taken up, and the Roots dry'd, and kept in Papers or Boxes until *December* or *January* ; at which Time they are to be planted in rich sandy Earth, about four or five Inches deep ; and when they are come up, and ready to flower, they are to have frequent Waterings with Pond-Water, or other Water that hath stood in the Sun for a Time. For the more effectual Propagation of these Flowers, Earth made by old Thatch, or Straw that hath lain a sufficient Time to rot and decay, being laid six or eight Inches under the Surface of the Ground, and fill'd up with fine rich Earth, will produce an extraordinary Increase.

If they are planted early in the Winter, you must take great Care to defend them from the sharp Winds and Frosts, for they are more tender than the *Anemone* ; and their Leaves once nip'd by the Frost, (which will appear by their brown Colour) will soon perish, and with them the Root ; but Glasses will preserve them, being taken off once a Day, and a gentle Watering given at the same Time.

These Flowers may be rais'd from Seeds, manag'd like unto the *Anemonies* ; and they flower in *April* and *May*.

The HYACINTH and STAFF FLOWER.

The *Hyacinth*, tho' not a very beautiful Flower, helps to make up the Variety of the Spring, and is estimable before the more excellent Flowers make their Appearance ; there are many sorts of them, the chief whereof are, the *Celestial*, the *white and blush*

blush starry Hyacinth, the fair double blue, and the double white Oriental, and the great Indian *Tuberose-rooted Hyacinth*, which produces a long Stalk handsomely ornamented with Leaves and fair Flowers at Top, and is generally planted in Pots, and thought worthy a Place in the Conservatory. This last *Hyacinth*, Mr. *Woolridge* observes, ought to be taken up annually in *April*, and the Roots carefully parted, and replanted in a Pot, having rich Earth in the Bottom, the middle Part for the Root natural fresh Earth, and the Top fill'd up with the same rich Earth as the Bottom. When the Flower is thus planted, 'tis a very good Way to sink the Pot into a Hot-Bed, the Heat whereof is somewhat abated, and let it there continue 'till the Roots begin to spring; then take it out, and place it under a *South Wall*, giving it a Watering in dry Weather, and Housing it in *September*.

Most of these Flowers produce Seeds; and being sown in the same Manner as *Tulip-Seeds*, will afford new Diversities; the *blue*, *white*, and *blush starry Hyacinth of Peru*, and the *blue Lilly-leav'd starry Hyacinth*, and several others of them, that adorn your Garden, are to be remov'd in *August*, and may be propagated by Off-sets, being taken up and replanted in *August*; wherein you are to take Notice, that they will not keep long out of the Ground. The *Hyacinths* flower from the latter End of *February*, until *May*, as there are many Kinds of them, some early and some later, and some will continue to flower until *August*.

Tho' there is no small Variety of Colours in this Flower, yet Art will contribute to it, and in an Instant alter Nature; if you but dip a Pencil in Spirit of Vitriol, and stroak it along the Leaves of the Purple-colour'd Flowers, it will turn them to a rich
Scarlet

Scarlet Colour. *Tulips, Crocus's, Iris's, &c.* of a Purple Colour may be so alrer'd, but no other Colours besides Purple; and the Leaves so serv'd, will wither in a Day's Time.

The *Star-Flowers* are near of Kin unto the *Hya-cinths*; the valuablē Sorts whereof are, the *Star-Flower of Naples*, which flowers in *April*; the *Star-Flower of Arabia*, which flowers in *May*; the great white *Bethlehem Star-Flower*, which flowers in *June*; and the *Æthiopian Star-Flower*, which flowers in *August*. These Flowers are increas'd by Roots taken up indifferently dry, and planted again in *September*; and the *Arabian* and *Æthiopian Stars* coming from hot Countries, are to be planted in rich warm Earth, and secur'd from the Severity of the Winter.

The NARCISsus, JONQUIL, &c.

This is a very common Flower; but considering its great Variety, bright Colour, and early Flowering, the better Kinds of them are worthily entertain'd in the Garden, especially in Avenues, Groves, Out-Hedges, and other Shades, which they much delight in; the double *French Narcissus*, or *Daffodil*, and double Whites are the best Sorts; others are the double yellow *Daffodil*, the great yellow *Daffodil* of *Africa*, and the *Turkey Daffodil*, the double *Jonquil*, or *Rush Daffodil*, the *Great Sea Daffodil*; then there's the *Indian Daffodil*, which bears many Flowers of various Colours on one Stalk. These Flowers are of a hardy Nature, and multiply much, in any Ground, tho' you ought to plant them in tolerable good Earth, freed from the Winter's Annoyance; most of them are to be taken up in *June* or *July*; and the principal Roots worthy Preservation.

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to be kept dry 'till *September*, when they are to be interr'd. They are propagated (all, except those whose Stocks produce several Flowers) by Seeds, which will produce great Varieties. You are to make your Choice out of the Seeds of the best single Flowers, (for the double bear no Seed) and to sow it in *September*, in a Place where it may be uninterrupted, and continue without Removal two or three Years ; at the Expiration of which Time, the Plants are to be taken up in the Month of *June*, and presently replanted in good Ground, at a proper Distance. The Seed of the *Sea-Daffodil* being sown, may remain ten Years at least unremov'd. The *Daffodils* having several Flowers on one Stalk, are, for the most part, increas'd by Off-sets, and are not to be often taken up, for they well endure the Cold.

The *Funquils* are of the same Kind with the *Daffodil*, and flower much about the same Time with them. The bulbous *Violet*, or *Snow-Drop*, is reckon'd amongst the *Daffodils*, and is esteem'd for its early Blowing in *January*.

The *Daffodils* flower about the same Time as the *Hyacinth*, viz. from the End of *February* to the Beginning of *May*.

The I R I S, or F L O W E R - D E - L U C E.

Iris, the *Flower-de luce*, of which there are two Sorts, the bulbous and tuberous-rooted ones, (the former whereof are distinguish'd into *Latifolia's* and *Tanuisolia's*, viz. broad and narrow leav'd) contain no small Variety of Colours, and are inferior in Beauty to few bulbous-rooted Flowers, except the *Tulip* : They are divided into three capital Colours, to wit, the *Blues*, the *Whites*, and the *Purples* ; and they all flower in Succession ; the best Flowers are the
great

great *bulbous Iris*, the *blue-strip'd*, and the great *white*: The *white tuberos Roots* are not so various as the *bulbous*, but afford many curious Flowers; the best whereof is the *Toad Flag*; and *blush-colour'd dwarf Flower-de-luce* is a Flower esteem'd. The Roots of these Flowers yearly lose their Fibres, and are to be taken out of the Ground as soon as the Leaves begin to wither, before new Fibres shoot forth, which they will do soon after the Stalk is dry'd down, and be then unfit to be stir'd: And when thus taken up, keep them dry 'till *August*, and then set them again in Beds prepar'd of good fresh sifted Earth, not too rich, (tho' very good) and expos'd to the Sun, but not too hot, (to the Morning Sun only, and not to the *South-West* Sun; for if the Ground be over rank, or in a very hot Position, the Flowers will soon consume. You may defer replanting the *tuberos Iris* 'till *September* or *October*; and fresh Earth, mix'd with well-rotted Wood-Pile Earth, is an excellent Soil for them; and some Persons take up these Flowers in *June*, and keep them dry 'till late in *October*, which hath been observ'd makes them the more apt to bear Flowers; but some of these Flowers, particularly the *Flags*, may continue in the Ground several Years without Removal.

For producing Varieties, the best Method is to sow the Seeds, tho' they may be increas'd by parting the Roots; and notwithstanding the *East* Sun is the most agreeable, and a good Soil the most proper, they'll grow (especially the common Sorts of them) in almost any Position, and any Kind of Ground. The common Kinds of *tuberos-rooted Flower-de-luces* are not fit for a fine Garden, they being too luxuriant for the best Ground.

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Some of these flower in *April*, others more numerous in *May*, many in *June*, and some in *July*. If any Wet happens to fall upon these Flowers, 'tis necessary to shake it off expeditiously, otherwise the Leaves of the Flower will decay.

The L I L L Y, and L I L L Y of the Valley.

The *Lilly* is a Flower esteem'd in the earliest of Times; about the Time of our Saviour, it was in great Reputation, no Flower being then more in Request in the choicest Gardens, except the *Rose*; and there is no Flower of that transcendant Whiteness as the *Lilly*: There are three Sorts of *Lillies*; the *Red*, the *Yellow*, and the *White*; whereof the *Yellow* is the most estimable: Then there's the *Persian Lilly*, the *Crown-Imperial* for the Spring, and several sorts of *Martagons*, but they are of little Value. *Lillies* are increas'd by Off-sets, being parted from the principal Roots soon after the Stalks are wither'd. The Roots ought to be set five Inches in the Earth, and to be annually uncover'd to the Bottom, without stirring the Fibres, when the young Roots are to be parted from them, and then to be fill'd up and cover'd with new rich Earth. These Flowers like not often removing, and they flower in *June*.

The *Lilly of the Valley*, altho' wild in many Places, (as many valuable Plants are in one Place or other) is yet entertain'd in many fine Gardens, being, for its rich Scent, almost equal to the *Orange-Flower*. It delights in shady Ground, and is easily propagated from Plants.

The PEONY.

This is a common Flower, but yields the fairest and most double Blossom of any, and is very becoming in your Flower-Pots or Chimneys: It contains two Sexes, Male and Female; the Male is single, and the Flower commonly of a Purple Red, and are but of one Sort; but the Females are many, some single, and great Numbers double. The best Kinds of *Peonies* are the *double Purple*, the *double Carnation Peony*, and the *double Blush* or *white Peony*. These *double Peonies* are admitted into the fine Gardens, and the *single ones* are turn'd over to the Herbs and Physick Gardens, for the specifick Virtues of their Roots.

These Flowers are increas'd by taking them up in *September* or *October*, and parting the Roots, at the same Time planting them: But some Persons have observ'd, that none of the Roots will grow, only such as have Sprouts or Buds at the End. They may be propagated by Seed, but it is a very dilatory Way, and the *double ones* seldom bring Seeds to Perfection. They flower in *May*.

The STOCK-GILLIFLOWER, *and*
WALL-FLOWERS.

The *Stock-Gilliflower* is a Flower of the greatest Fragrancy, and in Scent excell'd by none; the double Sort in Beauty not inferior to many, and containing (tho' small, yet) an agreeable Variety. They delight, for the most part, in barren Ground, and are rais'd either by Seeds, or by Slips and Layers. The double Flowers yield no Seed, so that you are left to make your Choice from the single Flowers;

Flowers ; the best whereof for this Purpose, is the *White-single*, the *single strip'd* with *White*, or the *five-leav'd Flower*, having one Leaf beyond the *single* ; which is an Argument that Nature hath set one Step forward in altering their ordinary Kind from *single* to *double* , and which is a general Rule in Respect to many other Flowers, for the Election of Seeds, for the Propagation of the double Kinds. These Seeds being sown at the Full of the Moon in *April*, on a Bed of good fine Earth, not too thick, commonly produce double Flowers. When they are grown about four Inches in Height, take them up about the Full of the Moon in a rainy Season, if you can have it, and plant them abroad into barren Earth, or they may be planted in the same Earth made barren with Sand, (and Street-Dirt is esteem'd very good) and water and shade them : This Labour you must reiterate twice, each Time being at the Full of the Moon, before the Winter approaches, to prevent their running to stalk, and to strengthen them against the Winter ; and you may venture to remove them three Times in the Winter, the three successive Full Moons, which will retard their springing, and cause a beautiful spreading. In the Spring, when you may discover, by the Largeness of the Buds, which will be double, you are to remove them carefully, by taking them up with a Clod of Earth about them, and set them in good Earth in your Flower-Garden, in a Place well shaded, where they are to remain all the Summer ; and being well water'd, will produce good Flowers : Those that are single, must be permitted to stand for the bearing of Seed ; and unless the Seed be yearly sown, you cannot preserve the Kinds.

After they have born Flowers, they are apt to die ; and the only Method to preserve them, is by
Slips

Slips or Cuttings set in *March*; choose such as are not spir'd for *Blowing*, cut them from the Stock, and slit the End in three or four Places about half an Inch, peeling away the Rind-Bark as far as the slit, and taking away the inward Wood: Then set this slip, with the Rind spread every Way, about two or three Inches deep; water it, and shade it until it hath taken Root: By this Means you may preserve your double Stocks with the greatest Certainty, and without the Trouble of Sowing, or two Years Patience. They may be also laid as other Plants are, but then they are to be kept secure from violent Colds. Often removing these Flowers into different Soils, will contribute to their Worth and Duration: And Stocks raised from Seeds will abide the second Winter, provided it be mild, and they are well defended; and if you take away the blowing Sprigs, the preceeding Autumn, it will much farther their Duration.

These Flowers begin to flower in *April*, flourish in *May*, and continue in Bloom 'till the nipping Frosts check them.

Wall-Flowers are increas'd and continued by Layers, or by Slips set in *March*, as the *Stock-Gilliflowers*, and are to be planted against a *South Wall*, and be secured from Frosts, and the severity of Winter, especially the *double White*, the *great Single*, *double Yellow*, and *bloody Wall-Flower*.

The *SAFFRON-FLOWER*, *CROCUS*, &c.

There are several sorts of *Saffron-Flowers*, under the two Denominations of *Colchicums*, viz. the *Meadow Saffrons* and *Crocus's*; their principal Colours are the *strip'd White*, *Yellow* and *Purple*. These Flowers being planted on the Edges of your Borders,

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Borders, particularly the *Cloth of Gold Crocus*, make a delightful Shew in the Spring, before your other Flowers come to Perfection. And the *Colchicums*, particularly the *Colchicum Chio*, and the *double Colchicum*, adorn your Garden in the Autumn, when most of your other Flowers have lost their Beauty. The Spring *Saffron-Flower*, or *Crocus* is to be taken up when the Leaves are wither'd, and kept dry 'till *October*, when they are to be planted. And the Autumnal *Saffron-Flowers*, or *Colchicums*, being taken up as the others, are to be set about the End of *August*, and some of them will flower within a Month after planted. They may be increas'd either by Seeds or the Roots, but the Root is the most preferable Way. The Seeds are to be sown in *September*, in light and rich Ground; and the Year after, (in or about *July*) they are to be transplanted into such like Soil as they were sown in. These Flowers are very apt for Vegetation, altho' your Ground be but ordinary; and if you permit them to stand more than one Year, you'll find the better Increase.

The early Sort of *Crocus's* flower in *February* and *March*, and the later Sort in *September* or *October*.

The CYCLAMEN.

Cyclamen, or *Sow-bread*, for its odoriferous Blossoms, is entertain'd in the choicest Gardens. There are three Sorts of these Flowers, the Spring *Cyclamen*, which flowers in *April* or *May*; the Summer *Cyclamen*, which flowers in *June* or *July*; and the Autumn *Cyclamen*, which flowereth in *August* and *September*; but the Spring *Cyclamens* are the most valuable. The Flower is commonly of a Purple Colour;

Colour; they are not often mov'd; and when you transplant them, do it in *June* or *July*. They are propagated by Seeds sown soon after ripe, in good light Earth in Pots or Boxes, and cover'd with Earth near an Inch thick; after they are sprung up, and the Leaves wither'd, add some more of the same Earth to them; cover them from the Frost the first Winter, and after the second Year remove them to proper Places for their standing to flower, wherein let them be set at convenient Distances, about nine Inches assunder.

The HEPATICA.

This Flower, commonly call'd *Liverwort*, is one of the prettiest Beauties of the Spring. There are two Sorts of *Hepatica's*, the single and the double, whereof the double and the white are eligible. They are increas'd by parting the Roots, or by sowing the Seed in Willow-Earth, some Time in *August*, in Cases or Beds least expos'd to the cold Winds or Frost. They must be planted forth in a rich well dung'd Soil. These Flowers are in their Glory in *March*.

CARDINALS FLOWER.

The *Cardinals Flower* is a Pot-Flower, and very tender: It is commonly planted in good rich light Earth; and on the Approach of the Winter, for its Preservation, you may place the Pot under a *South-Wall*, into the Earth three Inches deeper than the Top of the Pot, and then cloath the Top with dry Moss, and cover the whole with a Glass, which is to be taken off in warm Days, and in gentile Showers, to refresh the Roots; and in *April* you may take the Pot out of the Ground, and expose the Flower. These Flowers are increas'd by parting the

F Roots

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Roots about *September*; and they flower from the Beginning of *June* till *August*.

The LARKS-HEEL, or LARKS-SPUR.

The *Rose Lark-Spurs* are very pretty Flowers, and add to the Varieties of *July* and *August*, or earlier, if the Seed be sown before Winter, and carefully defended from the most severe Frosts. The common Season for their sowing is the Beginning of *April*. And you may have a Supply of these Annuals without the trouble of sowing, by permitting the Seeds of the Flowers to drop, which will come up the ensuing Spring.

The best of these Flowers will degenerate, being often sown in one Sort of Ground.

The M O L Y, &c.

There are several Sorts of these Flowers, as the *Indian Moly*, the great *Moly of Homer*, the yellow *Moly*, the *Moly of Hungary*, the *Spanish Purple Moly*, the sweet *Moly of Montpelier*, and some others. These *Molies* bear Starlike Flowers, and make an agreeable Mixture with others in your Flower-Pots and Chimneys. They are increas'd by the Roots, which may be taken up when the Stalks are dry, but they don't like to be often remov'd. These Flowers are to be preserv'd more for Variety, than for their Smell or Beauty, and will last long in Flower-Pots, with frequent Waterings. They flower in *May* and *June*.

The *Asphodels* also bear a Star-like Flower, and are increas'd by taking them up once in two or three Years, and parting the Roots, when the Stalk is dry, and then quickly planting them in Order again; and *August* is the

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the best Time to transplant them. These Flowers blow in *May* and *June*.

The A M A R A N T H U S.

The *Amaranthus*, or *Princes Feather*, (the best whereof is the great Purple) is a fine delicate Plant, bearing curious Tufts of several Colours, like unto Silks dy'd in Grain. These Flowers love a light and rank Soil; they are rais'd by Seeds sown in a Hot-Bed in *March* or *April*, and kept under Glasses in the hottest Part of your Garden, for the first Frost destroys them; and if you remove them, do it when they are grown to a proper Strength, and from one Hot-Bed to another, taking them up with Earth about them, and then transplant them, the Beginning of *May*, into good Earth, well expos'd to the Sun; you'll have your Flowers the sooner, and the Seeds the better. They are valu'd as they serve to supply the Vacancy of other Flowers in your empty Beds of *Tulips*, &c. before their time of replanting, and are in their full Beauty in *August*.

The N O N S U C H, or Flower of B R I S T O L.

This is a hardy Flower, and prospers best in poor Ground, for hot Ground, or Ground over rank, it will not thrive in. This Flower is of long Duration, and is increas'd by taking young Plants from the old Roots at the latter End of *March*, when they spring forth with many Heads, and each of them divided with a part of the Root, will grow, and soon come to bear Flowers: And the Seeds of these Flowers, sown as *Auricula's Seeds*, will produce new Varieties. They flower in *June* or *July*. *Campions* are propagated by Slips taken from the

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old Roots in *August* or *September*, when they are to be planted yearly, or you'll be in Danger of losing the Kind.

The M A R V E L of P R E U.

These Flowers (by some call'd the *Flowers of the Night*) have their Name from the wonderful Variety of Flowers on the same Root. They are propagated by Seeds collected from the several Sorts you would have, sown on a hot Bed, in the Beginning of *April*; from whence they are to be remov'd into rich Earth, where they may have the Benefit of the Sun. If they do not flower the first Year, enrich the Ground with Horse-Litter or Dung, before the Frosts commence, and let them continue so cover'd with the Dung all the Winter; they will flower the sooner the ensuing Year. The Roots of these Flowers are to be taken up at the Beginning of the Winter, after they have done flowering, and kept dry in a Box of Wool, and to be set again in good Mould in *March*. This Flower blows from *July* and *August*, until the coming of the cold frosty Mornings, and opens in the Night like the *Bindweed*, and in the Day shrinks in, on the Approach of the Sun. The *Bindweed* is a small blue Flower, which twines to Sticks about half a Yard high.

The C O L U M B I N E.

This Flower is acceptable in the Florist's Garden, for its Variety. It is raised by Seed sown in the Nursery in the Month of *April*; from whence you may remove your choice Plants to your Garden, and they'll yield Flowers the next Year in *May*. The Roots will continue in good Order three or four

four Years ; against which Time you ought to have a fresh Supply.

The O R C H I S, or the B E E - F L O W E R.

The *Satyrions*, *Bee-flowers*, or *Gnat-flowers*, are some of them beautiful Flowers, tho' taken out of the Fields and Meadows ; and the more remote they are fix'd from the Place of their Extraction, the more beautiful they grow. They are very tender, so that great Care must be taken in transplanting them ; the best Method is to take them up Earth and all, unless they are dry, and to set them in some shady barren Part of your Garden, for they will not live in a rich hot Soil. In the Spring, clip the Grass low with Scissars, leaving the Flowers, which will be in their Prosperity in *May*.

The N E S T E R T I A N.

The *Nestertians* are raised from Seed sown on a Hot-Bed in *March* ; and when the Heat of the Hot-Bed abateth, and the Plants are arriv'd to some Strength, they are to be remov'd with some of the same Mould about the Roots, to a second Hot-Bed ; and in *May* they are to be transplanted in good Ground well exposed to the Sun, where they are to remain until they flower, which will be in *September*, and 'till they bear Seed.

The H O L L Y - H O C K.

The double Sorts of these Flowers are very ornamental, being of various Colours ; the best whereof is the dark-colour'd *Holly-Hock*. These Flowers are propagated by Seeds, and flower the next Year after sown ;

sown; in the Interim they are to be remov'd in *August* or *September*, from your Seminary, into their proper Places of Vegetation. The agreeable Situation for these Flowers, is under some coarse Wall, which they'll fill handsomely, or any other Place shelter'd from the Winds. The *Holly-Hock* far exceeds the *Poppy* for Duration; but there is no Flower can be more glorious than the *Poppy*, where it well scented and lasting.

The DOG'S-TOOTH VIOLET.

The *Dog's-Tooth* with a yellow Flower is deservedly entertain'd by our Florists, but very difficult to be obtain'd, and not to be propagated in this Country. They are planted in a good fresh natural Soil not dung'd, about the Middle of *August*; it is also prudent not to keep them long out of the Ground, and to defend them from Rains, (which would endanger rotting them) for a Fortnight at least after they are set.

The SNAP-DRAGON.

The *Snap Dragon* is receiv'd in Gardens, by reason its flowering is of long Duration. It will grow in any Place, as on Walls, &c. and is rais'd by Seeds which are ripe in *August*, sown in good fine Earth, or by Slips set in *May* or *June*, but will not blow 'till the second Year. It flowers in *May* and *June*, and is only useful for Chimneys and Flower-Pots.

The SUN-FLOWER.

The *Sun-Flower* grows very tall, and therefore is most fit for Pots. It is rais'd annually from Seed
sown

sown in good rank Mould, well expos'd to the Sun, in *April*. This Flower thrives best under a warm Wall.

The CROWN-IMPERIAL.

A most stately and graceful Plant, bearing a Flower like unto the *Lilly*; and the double Sort, particularly the Orange-colour'd, and yellow, shew finely intermix'd in the Middle of a Flower-Pot. These Flowers are commonly increas'd by Off-sets that yearly spring from the old Roots, which are to be taken up in *June*, when the Stalks are dry, and replanted in *August*. But they may be propagated by Seed; and the Seeds of the yellow, when attainable, give the greatest Expectations of new Varieties.

* *The* RED SATIN-FLOWER.

This Flower is call'd the *French Honey-Suckle*, and hath many large Stalks; the Joints whereof produce smaller Stalks, which afford many Flowers, some of a red shining Colour, and some white; which last are most esteem'd. It is propagated by Seeds sown the Beginning of *April*, and flowers in *June* the second Year after Sowing, and dies the Winter following.

DAME's VIOLET.

The *Dame's Violet*, or *Queen's Gilliflower*, (of which the *double Whites*, the *double Purples*, and *double Strip'd*, are estimable, and give an odorous Scent, particularly in the Evening) is rais'd by Slips; which, set in the Ground at Spring, and shaded and water'd will grow well; but you are to
nip

nip off the Buds of your under-set Plants, as soon as they appear for Flowers ; otherwise they will blow untimely, and soon after die.

C R A N E's-B I L L.

This is a beautiful Flower in the Day, and very sweet and odorous in the Night. It is a tender Plant, and therefore set in a Pot : It is govern'd as the *Cardinal's Flower*, being hous'd and kept dry in the Winter, for over-much Moisture is very pernicious to the Roots. It flowers in *June*, having eight or ten on one Stalk.

V E N U S . L O O K I N G - G L A S S .

The *Venus Looking-Glass* is a pretty Seedling, the Branches whereof are low and tender, commonly lying on the Ground ; the Flowers are small, and of a bright purple Colour, having a white Chive in the Middle, that adds much to its Beauty. They flower in *June*, and are propagated by Seeds sown in *April* ; but they will increase after the first Year without sowing, by the falling of the Seeds.

D I T T A N T.

Fraxinella, or *Dittany*, is delightful to the Eye, but not very grateful to the Nose. It annually runs up in tall Stalks full of Flowers, not unpleasant ; and is increas'd by Plants or Seeds. The Seeds collected in *August*, and immediately sown, or in *February* following, in rich Earth, will produce Varieties. The new Springs ought to be taken from the old Roots the Beginning of *March*. It is a hardy Plant, and flowers in *June* and *July*.

C A N D Y

CANDY-TUFTS.

These Flowers are rais'd yearly by Seed sown in *April*; they are small Plants, about a Foot high, having small Flowers of a white or purple Colour at the Top. Any Ground is agreeable to them, and they flower in *August*.

SCARLET BEANS.

The *Scarlet Bean* makes a pretty Shew, and continues in Blossom, more or less, for several Months; it climbs up Bushes or Sticks set for that Purpose, or more properly it is to be fasten'd to a Wall, where the Branches will spread advantageously. These Flowers are propagated by Seed sown yearly in good Ground, that hath the Reflection of the Sun, particularly in *April*.

AFRICANS, or FRENCH MARRIGOLDS.

The *African* is taken Notice of for its large stately Flower, as broad as the Palm of your Hand, but it has no inviting Smell. It is rais'd by Seeds sown in *April*, in hot Beds, or other good Soil. When the Plants are grown in a tolerable Strength, remove them into rich Soil well expos'd to the Sun, but the out Borders are the most proper Situation. They flower in *August* or *September*.

HELLEBORE

The black *Hellebore* is regarded only for its Flowering about *Christmas*, when almost all other Flow-

ers are in Embryo, if not entirely unseen. It is not beautiful, but the best Sort of White *Hellebore* with red Flowers, is a Plant esteem'd by Florists. This flowers in *April* and *May*. These Flowers are increas'd by Seeds: They easily vegetate and will endure long in the Ground without Removal.

The *Lady's Slipper*, (so call'd from the Resemblance the Blossom bears to a Slipper) an *Hellebore*, is much valu'd by most Florists, altho' it grows wild in many Places of the *North of England*. It yields its Flowers early in the Summer.

The S E N S I B L E P L A N T, and other Plants propagated for Fancy.

The *Sensible Plant* has its Name from the Impression the Touching of it makes, for you no sooner touch the Leaf, but it instantly shrinks up together, and in a small Space of Time afterwards dilates it self again. The *Humble Plant*, so call'd from its prostrating it self on the Ground so soon as touch'd, tho' in a short Time it elevates it self again. And the *Noli me tangere*, which being touch'd, and the Pods, when they are gross, and not fully ripe, being taken between your Fingers, will give a sudden Snap, and fly in Pieces, to the great Surprise of the Person molesting it. These Plants are rais'd by Seeds sown on hot Beds, and must be preserv'd with great Care, being of a very tender Nature.

The other Flowers and Plants more common, and therefore not worthy particular Notice.

The *Fox-Glove*, *Garden-Mallows*, *Toad-Flax*, *Scabious*, *Snail-Flowers*, *Blue-Bottles*, *Fennel-Flower*, *double Pellitory*, *Fatherfew*, *double Lady's Smock*, *Gentianella*, *Caterpillars*, *Grove-Trifles*, *Apple of Love*,

Love, Canterbury Bells, Thorny Apple, Oak of Jerusalem, Wolf-Bane, Batchelor's-Button, Bell-Flower, Rockets, Monk's-Hood, Campions, Morb Mullerins, Garden Lupines, &c. These almost every Country Dame has in her Garden, and knows how to sow, plant, and propagate them. Then, for your sweet Herbs, there's *Marjoram, Basil, Penny-Royal, Mastick, Lavender, Thyme, Sage Gold and Silver,* and *double flower'd Rosemary,* which every Kitchen-Maid is so well acquainted with, that I need make no farther Mention of them. I shall conclude this Chapter with some necessary Directions relating to the Removal of Flowers.

If you have at any Time Occasion to remove Flowers to any distant Place or Country, rub them over with Honey, and wrap them up in Moss; it will effectually secure them, being pack'd up in Papers free from the Wet: And to prepare your Pots for Flowers, it is a good Method to set them out in the Sun, that the Earth may thereby be purify'd; which being musty, would endanger the Roots.

Hot Beds, for raising of Flowers, and all other Uses, *vide Kalendarium Hortense.*

C H A P. III.

OF FLOWER-TREES, SHRUBS, and other
curious Plants, and their Culture.

BY the Propagation of the Flowers already treated of, and the *Flower-Trees* and *Shrubs* I am proceeding to, you may have your *Garden, Grove,* and *Avenues* replete with a sufficient Variety of Flowers, at all Seasons in the Year; and please the Eye in the most sensible Manner, at the same Time you gratify the Sense of Smelling. In respect to these

these Shrubs, the hardy *Mezerion* shews its Flowers in *January*, and continues till Spring; the *Jessamines* make up a good Part of the Summer; and the Monthly *Rose*, with a little Trouble, will continue to blossom till *Christmas*. I shall begin this Chapter with the *Rose-Tree*, which, by its Variety of beautiful odoriferous Flowers, is one of the greatest Ornaments of our *English Gardens*.

The R O S E.

There are many Sorts of *Roses*; the sweetest and most useful whereof, is the *Damask*; but the *Rose* most beautiful, is the *Rosa Mundi*, and the *Yellow Province Rose*. Other *Roses* of Signification, are the *Damask Province*, the *Austrian*, *Velvet Rose*, *Belgick Roses*, the *Marbled Rose*, the *Red Rose*, the *White Rose*, *Chrystial Rose*, *Francfort Rose*, the *Monthly Rose* of the Species of the *Damask*, the *Hungarian Rose*, *Apple Rose*, *double Dog Rose*, *Ever-green Rose*, and the *Cinnamon Rose*, which flowers in *May*, before any of the other Kinds are in their Beauty; and the *Musk Roses*, which flower in *August* or *September*, when all the other *Roses* are in their Decline. Then there's *Eglantine* or *Sweet Bryar*, one of the best of odoriferous Plants, and, next to the *Honeysuckle*, is the most delightful near your Houses, or Places of Repose; and the *Gelder Rose*, or *Elder Rose*, a hardy Tree yielding plenty of white Branches full of Blossoms.

Roses are increas'd by Inoculation, or by laying down the Branches of the whole in the Earth in the Spring, for all *Roses* are apt to yield Suckers; this last is esteem'd the surest Way, wherein you are to prick many Holes with an Awl, about a Joint that will lie in the Earth, and then cover it with good Mould,

Mould, and well-rotted Dung, pegging them down, that they rise not again ; and being water'd now and then in dry Seasons, by Autumn they'll be fit to be cut off and remov'd. This Method is no Hindrance to the Produce, nor Beauty of the Tree the next Year. If you increase these Trees by inoculating the Buds on other Stocks, the best Stocks are the *Damask*, *White*, *Francfort*, and *Wild Eglantine*. This Operation is to be perform'd about Midsummer ; the Buds inoculated, are to be as near the Ground as may be, that the sprouting Lance may be laid in the Earth to root after one Year's Growth ; and the Stocks must be kept free from Suckers.

When you intend to increase the *Yellow Province Rose* (the greatest Beauty, as I have before observ'd) the compleatest Method is to bud a single *Yellow Rose* on the Stock of a vigorous *Francfort Rose*, near the Ground, which will in a short Space shoot to a good Length ; then inoculate in that Branch your double *Yellow Rose* of the best Kind, and keep off all Suckers from the Root of the first and second, leaving only the last, which ought to be prun'd very near, leaving but few Buds in the Spring ; so that they may want no Nourishment to produce large and fair Blossoms. This *Yellow Rose-Tree* delights most in a cold, moist, or shady Place, contrary to all other *Roses*, and is by no Means to be plac'd against a hot Wall.

No Expedient is necessary to accelerate the early flowering of *Roses*, since they commonly blow in a Season when other Flowers cannot eclipse their Glory ; and if any Experiments are us'd for altering the time of their flowering, those for retarding the Bloom, are to be embrac'd, which is easily effected ; you need only shear off the Buds of the Tree when they new put forth, the Business is done ; and a
second

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second Shearing in such a Case, may very well answer your Expectation. In pruning of *Rose-Trees*, you are to cut them with your Garden-Shears, pretty close to the old Wood, presently after Blowing; and near the Spring, all dead Wood, and superfluous Branches, are to be taken away; and the Branches left to be prun'd close to a Leaf or Bud. Let none of your *Rose-Trees* grow to a luxuriant Height; four or five Foot high is lofty enough for all *Roses*, except the *Musks*, which thrive best against a Wall, and are usually permitted to grow to their full Height, which is eight or nine Foot at least.

The common Sorts of *Roses* flower in *June* and *July*, but you may have the Monthly *Rose* until *Christmas*, by placing it in some Nich of a South-Wall, with Shutters artificially made for its Defence against the Cold, or by adding artificial Warmth.

The JESSAMINE, &c.

This Tree is likewise famous for producing Flowers of a grateful and odoriferous Scent. The Kinds of *Jessamines* are, the *White Jessamine*, the *Yellow*, the *Indian Jessamine*, the *Spanish Jessamine*, the *Persian Jessamine*, and the *Arabian Jessamine*, or *double white Pipe-Tree*. The *Yellow Jessamine* is the most common, and the *White* is the most estimable, yielding one of the most odorous Flowers in Nature; tho' the *Persian Jessamine* preceeds all others, in respect to the Time of Blossoming; the *yellow strip'd Jessamine* is judiciously treated of by *Mr. Laurence*, in the first Part of this Work. And the *White* and *Yellow* common *Jessamines* are increas'd by Layers and Suckers; but the *Indian Yellow*, and the *Spanish Jessamines*, &c. are oftentimes in-

creas'd

increas'd by grafting them late in the Spring, by way of Approach on the common *White Jessamine*; but they may be likewise increas'd by Layers: The former endure the Winters Cold very well, (tho' their Branches are but slender and weak, and require the Assistance of a Wall, or Pallisade, for their Support) but the latter are less hardy, and therefore planted in Pots or Boxes, that they may be hous'd in the Winter, for their Preservation. They flower in *July* and *August*.

The *Syringa Pipe-Tree*, or *Lilack*, bears a Blossom not much unlike the *Persian Jessamine*. It flowers in *April* and *May*, and yields plenty of Suckers; but is a nice Plant, and requires the Skill of a curious Artist, for its Management.

The POMEGRANATE.

The double blossom'd *Pomegranate-Tree*, is esteem'd the most excellent of all flowering-Trees; it merits the best Place in your Garden, and requires a warm South-Wall for its Propagation, being very tender whilst young, but afterwards becomes very hardy. These Trees are increas'd by Layers or Suckers, which are to be defended from Frosts in the Winter, by Matting or otherwise; but the most effectual Way is to plant the Suckers in Boxes or Cases made of Wood, that may be hous'd in the Winter: In the Spring you are to separate the Suckers that proceed from each, (which usually are many in Number) and keep them to a few or but one Branch, that they may not be robb'd of their Nourishment; and if you sometimes enrich the Soil with well-consum'd Hogs-Dung, they will be very apt to blossom. They flower in *August* and *September*;

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ember ; and the Blossoms, for Fairness and Beauty, exceed all others that are born by Trees.

The M E Z E R I O N.

This is a Plant of the most hardy Nature, and is valu'd for sending forth its pleasant Flowers in the severest Season of the Year, commonly in *January* ; and for its Duration at so cold a Time, until the End of *March*, when the Blossom is succeeded by Leaves and fine Coralline Berries. By these Berries it is propagated, being sown in good Earth in *July* ; but they will not come up until the second Spring, neither will they be fit to be remov'd 'till a Year or two after. Tho' Cold will not injure this Shrub, yet it is very nice in the Choice of its Ground ; the Soil ought to be neither light nor very moist ; and for Weather, Heat only is pernicious to it. There are three Sorts of *Mezerions*, the *White*, the *Red*, and the *Peach-colour'd*.

The INDIAN BAT, &c.

This Plant thrives with us but slowly, rising not above four Foot high : It is thick with Leaves, which are betwixt those of the *Cherry Bay*, and the common Kind ; the Flowers grow in a long Spike, of a greenish white Colour, and are succeeded by Berries like small *Olives*. This Plant flowers in *July* and *August*, and is increas'd by Layers. It must be defended from Frosts in the Winter.

The *Dwarf Bay* bears Flowers in *February*, and those Flowers are follow'd by small Berries ; by which are rais'd beautiful Plants, being interr'd in good light Earth, in Boxes, as soon as they are ripe ; or good Earth spread abroad under the Shrubs, for the

the Seeds, as they ripen, to fall into, is a very good Way for Propagation, covering them over with the same Mould, but not too thick.

The *Rose Bay* is a pleasing Plant, bearing some blush and some white Flowers; but must be secur'd from the most violent cold Weather.

The STRAWBERRY-TREE.

The Leaves of this Tree are alternately green, like the *Bays*; the Flowers grow on the Ends of the Branches, with long Stalks, being little white Bottles, like to those of the *Lilly of the Valley*, which are of little Beauty, but succeeded by beautiful Berries, like to *Strawberries*, containing many Seeds. Young Plants are rais'd from these Seeds, and some by Layers; they are slow in their Growth, and must be carefully remov'd with some of the Earth about them, when fit, to some warm Situation under a South Wall. This Tree flowers in *November*.

The DWARF ALMOND.

The *Dwarf Almond* is a pleasant Plant, and produces many fine *Peach-colour'd* Blossoms in *April*; and some Years it brings to Perfection bitter *Almonds*, which gives it its Name. It yields plenty of *Gions*, and will endure all Weathers without housing.

The CISTUS.

The *Gum Cistus* rises higher than the *Cistus Mize*, and is more spreading in its Branches; at the Tops whereof stand single white Flowers with five Leaves, like single *Roses*; which being past, square Heads succeed, containing small brownish Seeds. These Plants are propagated by Seeds collected in *August* or *September*, and sown in good rich Earth in *February*.

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ruary; or they may be increas'd by Shoots taken from the old Tree, planted in good Earth, and carefully look'd after; for they endure not Cold, but are to be hous'd in Winter. They flower in *June* or *July*.

The SENA-TREE.

There are two Sorts of *Sena-Trees*, the *Scorpion Sena*, and the *Bastard Sena*, both of them producing fine yellow Blossoms, and beautiful Leaves. They are increas'd either by Seeds, Suckers, or Layers; endure all Weathers, and are very ionfile, and reducible to Order, but slender; and therefore want the Assistance of a Wall for their Support.

The INDIAN FIG.

This Tree, call'd the *Minor Fig*, produces Leaves springing one out of another, and is the only Shrub propagated by the Leaf; which being interr'd half into the Earth, will take Root, and put forth others; but this is owing in a great Measure to the Substance of the Leaf; for it is of the Thickness of your Finger. At the Tops of the Leaves, in *June*, appear the Flowers of a yellowish Colour; after the Flowers are past, the Head increases, and comes to the Form of a Fig, but never with us arrives to Maturity. This is planted in Pots, and hous'd in the Winter.

SHRUB SPIREA; or, SPIREA FRUTEX.

This Tree rises up about a Yard high, with several woody Stalks set with Leaves, not unlike those of *Sally*, but somewhat less, and nick'd on the Edges;

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on the Tops of the Stalks shoot forth many small Flowers, of a pale *Peach-Colour*, which are in their Splendor in *August*. It is increas'd by Layers, and will endure the Winter.

H Y P E R I C U M F R U T E X.

Hypericum Frutex, or woody *St. John's Wort*, is a Shrub producing abundance of small slender Shoots, which are so thick with small white Blofoms in *May*, that it makes the Figure of a Tree all hoary with Frost. This Tree is increas'd by Layers or Suckers, and very well endures all Weathers.

The L A B U R N U M.

This Tree is pleasing, tho' common, and is by some call'd *Bean Trefoyl*, from the Resemblance the Leaves bear to the Herb *Trefoyl*, and its Pods to Beans. It is propagated by Seeds, Cuttings, and Layers, and requires some artificial Helps for the Support of its weak Branches, which in *May* produce a good Quantity of fine yellow Flowers.

The V I R G I N I A N C L I M E R.

This Plant comes out of the Ground usually in *May*, (with long winding Stalks, more or less, and in Height, according to the Age or Vigour of the Plant) shews its beautiful Flowers in *August*, and the Stalks die to the Ground on the Approach of Winter, springing again the next *May*. This Tree is increas'd by little long Roots, which run far in the Earth, and put up Heads in several Places: It loves a hot Position: and is therefore to be planted in a large Pot, for the Benefit of Removal, and for

housing in the Winter ; and this will secure the Roots from a too large Increase. These Pots may be set in hot Beds in the Spring, to bring them forward. If you set them not in Pots, the Roots are to be cover'd, and defended from Frost in the Winter.

VIRGINS BOWER.

There are two Sorts of *Virgins Bower*, the *Red*, and the *Purple-colour'd*; but the *double Purple* only is estimable. It is a climbing Tree, fit for Arbours, or other Places of Repose ; tho' it does well against a Wall. In the Winter you may cut off the young and small Branches, which are apt to die : In *March* you are to prune them, and the shorter you cut them, the fairer will be your Flowers. These Trees are increas'd by Layers, and are very spreading. They flower in *July* and *August*.

The SHRUB MALLOW.

This Tree blossoms in *August* and *September*, and adds to the Variety of the Autumn ; the Blossoms resemble those of the *Mallow*, and are equal fair and ornamental. These Trees, (there being two Sorts of them, the *Purple* and the *White*) are increas'd by laying down the Branches in the Earth, or grafting by Approach ; and sometimes they may be propagated by Seeds ; but those seldom come to Maturity here. They endure the Winter, and are commonly planted Standards.

SPANISH BROOM,

The *Spanish Broom* is not much unlike to the *Yellow Jessamine* in Form, but the Flowers resemble the
Ordinary

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Ordinary Broom. This Tree is encreas'd by Suckers or Layers, or it may be rais'd by the Seed being sown as soon as it is ripe ; and will thrive best under a South Wall. It flowers in *May*.

EVERLASTING PEASE.

This Plant bears a pretty Blossom, of a purplish red Colour, (tho' there's a blue one that is more rare) like unto large Pease-Blossoms. It is call'd *Everlasting Pease*, from the long Duration of the Root ; but the Haum, which likewise resembles that of Pease dies to the Ground in Winter, and shoots forth again in the Spring. This Haum rises high, and must therefore be supported : In *September* it produces Cods with small Pease, which being sown in the Spring will produce new Plants ; but they are two or three Years before they arrive to Maturity to bear Flowers.

WOOD BINDS,

The *Honey-Suckle* is the chief of these Plants, and although it be a common Vegetable, yet well deserves the Pains of Propagation ; especially the more generous Kinds of it, the double, and the red, which make a most agreeable Mixture with other climbing Trees in the covering of Arbours, Summer-Houses, Seats, &c. the Flowers being not only beautiful, but of a most odorous Smell. Both Sorts are easily encreas'd by Layers, and the double Sort flowers in *May*, and the red in *June* or *July*.

Periploca is a *Woodbind*, that twilts it self about a Pole like unto the Hop. It is encreas'd by Layers, and annually puts forth small blue Blossoms.

PEACH.

PEACH-TREE, and CHERRY-TREE.

There is a Sort of *Peach-Tree* which produces beautiful double Flowers: and a *Cherry* that bears a fair double Blossom, of a white Colour; the former produceth Fruit, but the latter doth not, yet it is an acceptable Plant to Florists. These Trees require a Place under your Walls.

The ROSEMARY-TREE.

Tho' this be a vulgar Plant, it is one of the most useful the Garden affords: The common Sort is generally turn'd over to the Kitchen Garden; but the dwarf Kind of *Rosemary* with a double Blossom, kept shear'd, is very comely, and generally admitted to a Place in your best Garden. It loves a warm Situation, and is easily manag'd, were not the cold Winds prejudicial to it. It flowers in *May*, and is encreas'd by Slips set either early in the Spring or in Autumn; and some say it may be rais'd by Seeds brought from foreign Countries.

There's your *Rosemary* gilded with Yellow, and a Sort of it variegated with White, very delightful to the Eye, which are to be preserv'd under warm Walls, or other Fences, against the Violence of the Wind,

SHRUB NIGHTSHADE.

This is a gilded Weed, which for Variety sake is entertain'd in Gardens. It flowers towards the latter End of *May*, or in the Beginning of *June*, and is encreas'd by Layers, or Seeds sown in Boxes of good Earth; notwithstanding this is a Weed, it requires housing in the Winter.

C H A P. IV.

The most commodious Methods for erecting CONSERVATORIES, GREEN-HOUSES, and ORANGERIES : With the Culture and Management of EXOTICKS, PERENNIAL GREENS, and other tender Plants.

THE Preference that is given to *Exoticks* beyond our *Domestick* Plants, and the Observations I have made relating to those Vegetables, occasion me to treat concisely of them ; flattering my self, that a short Chapter on this Head will not be unacceptable to the curious. These Plants are acquir'd and propagated with no small Trouble, and at a necessary Expence : But the Beauty of the *Orange* and *Lemon* only, when they are ripe and in their full Glory, (which they will arrive to in a few Years, with an exact Culture and Management) and the odoriferous Flowers or Blossoms they annually produce when they have attain'd a tolerable Growth, will be a sufficient Recompence to all curious Persons, for the Expence and Trouble in their raising and bringing to Perfection. I shall begin with the Conservatories for these fine Greens.

The GREEN-HOUSE, and other Conservatories.

In respect to the Situation of your *Green-House*, very little need be said to induce you to a good Choice ; the South and East Exposition, every Body knows, receive the greatest Benefit from the Sun, and are the most benign to all manner of tender Plants, which of Consequence determines your Election ; but there are many other Things relating to the Conservatories, and particularly the *Stoves*, wor-
thy

thy of Observation. I shall first give you the regular Dimensions of a *Green-House* : The Length of your House may extend about twenty five Foot or more, the Depth about twelve, and the Height not above ten Foot ; and whatsoever Length your *Green-House* is of, it ought not to be above thirteen Foot in Depth. The Side expos'd next the Sun ought to be made of large South-Windows ; For Light itself, next to Air, according to the judicious Observations of Mr *Evelyn*, is of the greatest Importance to the Greens and Plants ; but then the Joints and Glazing ought to be accurately fitted : And at your Entrance into the House, it were convenient a small handsome Porch (which might be likewise shash'd on the Sides) were erected, that the Door of it might shut close after you, before you open the *Green-House* Door, and by that Means prevent the rushing in of the crude Air. Your *Green-House* being so compleated, I proceed to the *Stove* : At one End of the Conservatory, either the East or West, on the outside Wall, side-ways, you may build your *Stove* of Brick or Stone, in a square Form, of the common Size of a plain single Furnace, consisting of a Fire-Hearth, and Ash-Hole only ; which need not take up above two Foot from Side to Side ; built so, that the Fire-Grate stand about three Foot above the Floor of the House, and the Flue-Shaft, and Fire, and Ash Hole, to be all without joining close to the Wall of the House, in the Middle : Let there be several earthen Pipes through the *Stove*, just underneath the Fire-Hearth into the *Green House* from the open Air, which will let into the House as well the Heat, as a Supply of qualify'd Air and Nutrition to the Plants ; so that the Plants will not be suffocated or sickly by a long Confinement for want of breathing ; (the Case of a great many Vegetables in *Green-Houses* with

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(with common *Stoves*.) To this you may add an Air-Pipe of the whole Length of the House under Ground. The Flue in the outside of the Wall will carry up both the Smoke of the Fuel, and the exhausted Air of the *Green-House*, through the Air-pipes, &c. And as your Greens are plac'd nearer or farther from the Noses of the *Stove*-Pipes in the House, so they will enjoy the Climates which are most natural and agreeable to them. This is the Method recommended by the ingenious Mr. *Evelyn*, and is generally approv'd by all such Gentlemen as can afford the Expence.

In your common *Green-Houses*, the Sashes are discretionarily open'd, for the Benefit both of the Sun and the Air, when either are kind or agreeable : The Walls ought to be dry and thick, and the Floor to be advanc'd higher than the Earth ; under which, in a Sort of a Vault, *Stoves* are methodically prepar'd for Firing, with Pipes for the regular Conveyance of the Heat ; so that there may be an equal moderate Heat diffus'd over the whole *Green-House* : But these Fires are not to be made, until Water freezes in your Conservatory, which plainly shews a Necessity ; and at no Time to be over large, for that would consume and dry up the Moisture of the Roots, which are not regularly to be water'd during the Winter, tho' the Earth about them ought to be always moist. Setting *Orange-Trees* very close together in the *Green-House*, I have observ'd, will cause them to sweat 'till they drop, to their no small Refreshment : And on their Removal out of the *Green-House* in May, and their carrying in again about the Middle of *October*, you are to bestow upon them a plentiful Watering ; I suppose I need not caution you to season your Trees gradually to the Air, and likewise to and from the Heat, so as they may be at all Seasons in the Year, as near as may be, of one Temperature.

perature, which you'll find very much advantage and facilitate their Growth.

Where you have no *Stove* for your Conservatory, you may sink a Hole a little Way into the Floor, about the Middle of the House, and therein make a moderate Fire of Charcoal ; which will answer your Expectation.

Mr. *Woolridge* recommends a Wall adjacent to the House, well defended behind, and on either Side, and the Top secur'd from the Weather, in the Nature of a large Nich, having several Leaves or Doors made to shut before, with Concavities behind, thro' which the Heat of Fire may pass to your Trees in a severe Season, to be a proper Situation for *Orange-Trees* : Against such a Wall you may plant your *Oranges* with Success, and prune them there without Removal, observing, in the Spring, to spread your Leaves or Doors by Degrees, before you open them quite ; and on the Approach of Winter, likewise, to shut them up gradually.

A Conservatory, or separate Place for variegated Greens, Plants, and Flowers, *vide* Mr. *Laurence's* Letter, at the End of this Work.

There are another Sort of Conservatories, (hitherto unobserv'd by any Author) easily erected, and with little Trouble preserv'd, which, in my Opinion, are equally useful to any, next the regular built *Green-House* ; which is this : In the Autumn mark out a Piece of Ground, of about twelve or fifteen Foot in Length, and about five or six Foot in Depth, under a warm South Wall well guarded from Winds, and generally near your Mellow Ground you make a Choice to your Satisfaction ; for this Ground prepare a wooden Frame, of about seven Foot high against the Wall, and lowering to about five Foot on the outside from the Wall, with an easy Slope ; the
Sides

Sides of this Frame fill up pretty thick with dry Reeds or Rushes, which are very warm; having a Door likewise of Reed before, or one half of the Side made to throw open upon Occasion, for Access to your Greens; and let the Slope over Head, or the greatest Part thereof downwards, be cover'd with common Glass-Frames, like those of hot Beds, about three of them in the whole Length of the Front, for the letting in either the Sun or the Air; when it may be proper: This Convenience may be erected for an inconsiderable Expence, in respect to any other Conservatory, and may be maintain'd in Repair for a very Trifle; for one Coat of Reeds will very well serve two Years. This Conservatory will commodiously receive five and twenty Greens in Pots, besides Flowers and other small Plants; which is a sufficient Number of tender Vegetables for a delightful Garden.

Then for *Orangeries*, I have observ'd, that the Ground fit to be chosen is likewise under a well shelter'd South Wall; that about twenty Foot square is an agreeable Size; that the best Hedges are your *Hornbeam* and *Dutch Elms*, agreeably mixt, (to which you may add some few *Ews* or *Firs*, especially at the Corners) which will grow ten or fifteen Foot high, and are no less beautiful than lofty, being kept exactly shear'd: Through the Middle of this Conservatory, it is necessary, that there be a Walk fill'd of the Sides with your choicest *Oranges* and *Lemons*; and the Spaces behind stor'd with your other fine Greens and Shrubs, as they deserve Place: This principal Walk through your *Orangery*, with little solitary Walks round your Greens, and an Arbour, or Place of Repose, being near a River or murmuring Brook, when some of the Trees are loaden with delicious Fruit, and others are in Bloom, which is generally the Case where there are Trees of different Ages, in the

blowing Season, is certainly the greatest Pleasure attainable by the Improvement of Nature in a Way of Plantation. Having now done with my *Green-House*, *Conservatories*, and *Orangeries*, I proceed to the *Exotick* Plants, for which they are erected, and begin with the *Orange-Tree*.

The ORANGE-TREE and LEMON-TREE.

These Trees are of a very tender Nature, expect an exact Culture, and require the Care of a well-skill'd Gardener. The most agreeable Soil for them, which *Mr. London*, in his admirable Book of Gardening, mentions, is a fine loamy and substantial Earth, temper'd with an equal Quantity of Earth of decay'd *Melon* or *Cucumber* Beds, sifted into Cases, after it has remain'd a whole Winter to meliorate; and substantial Earth, and Sheeps-Dung, or Neats-Dung, is an excellent Soil. They are rais'd of Kernels of the *Sevil* Kind, sown in *March*, in hot Beds or Cases of the richest Soil, about two Inches deep, the Earth is to be kept frequently stirr'd about them, from *April* to *October* yearly, which moves the Salts and contributes much to the Vegetation of all Sorts of young Trees; and they being water'd and prun'd with Discretion, in about three Years Time they'll be of Maturity for Inoculation; (when you may bud at the End of *March*, placing two Buds opposite to each other, within an Inch of the Earth:) And in about four or five Years they'll be of a fit Size to graft on; when after having made Choice of Grafts from the Fruit you desire, you may perform the Operation of grafting cleft-ways, as you do other Fruit in *April* or *May*; but the most preferable Method is grafting by Approach; which is done by plying the Stock down to the Ground, after you have fix'd your Graft, and then covering it with Earth just below the same. In
August

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August you are to cut off the Stock just beyond where 'twas fix'd in the Ground, and so your young Tree will be intire. These Trees may be likewise increas'd by Suckers. If you do not raise the Trees your self, but buy the Plants, take Care to make Choice of those that are of a lively yellowish green Colour; which, on making an Incision, the Rind separates from the Wood, and the Wood underneath the Bark, moist, having Leaves that are firm; for these are worthy Election: But the *Limon* hath a more yellowish Bark than the *Orange*. Your Tree so chosen, lop the Head of it to within three or four Inches of the Body, taking away all small Branches, and prune the Roots in the same Manner, leaving none but the large ones, and those not above five or six Inches in Length; and then plant it in *April* or *May*, or in *October*, the proper Seasons. When you have Occasion to transmit *Orange-Trees* to Foreign Parts, Monsieur *Quintiney* advises you to dock their Roots shorter than the Heads; which last he proposes, in such a Case, to be left eighteen Inches in Length from the Body.

In the Pruning of the *Orange-Tree*, you are to endeavour to bring it, as near as may be, to the shape of a *Mushroom*, to be full and flat, and well fill'd with Branches in the Middle, but not too numerous, which would make a Perplexity; and you are to take Care that no Branch be permitted to shoot above half a Foot in one Spring. The Season for Pruning, is from *May* to *August*, wherein the small Branches only are to be taken away, unless it be to reduce the Tree to a more handsome Figure, when large Branches may be likewise shortened. And to prevent Injury in such Cases, you may apply Clay, or a Mixture of Bees-Wax, Rosin, and Turpentine; and when they are sick, be sure leave not the Head too large for the Root. When your Trees want Re-casing,

casings, which will be once in four or five Years of Course, and oftner, if they are sickly, you are to pare off about two Thirds of the old Mould, with a Cutting-Knife, as the Tree stands in the Box; then pull out the Root with the Earth, and put it under Water for a small Space; then having prepar'd fresh Earth, as already directed, well water'd the Day before, that it may bind, but not be over moist, place the Tree in your Tub, and the fresh Earth round the Root, ramming it down pretty hard. This is the Method generally observ'd in Re-casing; and as the Trees grow large, you are to enlarge your Cases. * But the Earth may be renew'd without Re-casing, by abating the upper Part of it, and stirring it gently with a Fork, taking Heed to the Roots, and applying the prepar'd Earth in the Room of the other, in *May* and *September*: At which Time it may be done annually, for their Nourishment and Preservation. You are to water these Trees, during the hot Months, from *May* to *August*; or you may continue to give them Waterings 'till *October*, in a dry Season; but you are to do it gently; and two Waterings in a Week may suffice. The Water ought to have Sheep's Dung infus'd, and to have stood in the Sun in the same Manner as the Water for Flowers.

The fragrant Flowers of this Tree continue long, 'till new ones thrust them off. They are in their Glory in *August* and *September*, when you are to gather most of them; for if many are left to knit, the Tree will spend it self in the Fruit. The *Limon-Tree* requires exactly the same Culture as the *Orange*.

The MYRTLE

The *Myrtle* is an odoriferous Plant, which was highly esteem'd by the ancient *Romans*, who built many

* Vide more of Re-casing Orange-Trees, &c. in *Kalend. Hortens. Mens. May*.

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many Superstitions and Prognosticks, relative to the Government, from the good or ill State of this Tree. And some Authors affirm, that the sweet Perfume of it, when burnt, became an Atonement for the Offence the *Romans* had committed in ravishing the *Sabine* Virgins. And *Cato* mentions a *Myrtle*, call'd by the Name of the *Conjugal Myrtle*. There are several Sorts of *Myrtles*; the most worthy whereof is the double white blossom'd *Myrtle*, that flowers in Autumn: Others are the broad-leav'd *Myrtle*, and the narrow-leav'd *Myrtle*, both very fine and sweet smelling Shrubs. An easy Defence will make them endure hard Winters. And there's a Sort of *Myrtle*, call'd the *Spanish Myrtle*, that will resist all Weather without any Shelter. These Plants are increas'd by Layers, and likewise by Seeds; but the latter are the most tender. The usual Time for laying, and also for removing them, is in *August*; and they may be transplanted into Cases in *April*. Old Neats Dung beaten small, and an equal Share of good loamy Earth, with a little Willow Earth, is an excellent Compost for these Plants.

The *PASSION FLOWER*.

The *Maracoc*, or *Passion Flower*, so call'd from the Thorns it bears, representing the Thorns wherewith our Saviour was crown'd, is increas'd by Cions, which it plentifully produceth. This Plant will yield many beautiful Flowers in *August*, being preserv'd from the Extremity of the Frost, and secur'd from Snails, which as naturally affect it, as Cats do the *Marrum Syriacum*.

A M O M U M P L I N I I.

This Plant was entertain'd with Pleasure by *Pliny*, from whom it receiv'd its Name. It grows common in divers Parts of *Asia*, and yields a rich and costly

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costly Berry, very useful in Perfumes; and is now, with great Care, and the Help of the Conservatory, nurs'd up in our Climate; and being very tender, requires the same Management as the *Orange-Tree*.

The INDIAN JESSAMINE.

The *Yellow Indian Jessamine*, and *Spanish White Jessamine*, being very curious Shrubs, and yielding most fragrant Flowers, merit a Place in the open *Green House*, where a small Defence will secure them from the pernicious Effects of severe weather.

MARUM, MARUM STRIACUM.

The *Marum* or *Mastick Thyme*, is a very common Plant, but of a curious Scent, and therefore worthy Preservation. It is apt to be increas'd by Slips, but very easily destroy'd by Cold. The *Marum Syriacum*, or *Assyrian Mastick*, is of the same Nature as the other *Marum*, and requires the same Culture; but there's great Difficulty in securing it from Cats, which are easily entic'd to devour it. These Plants are best preserv'd by placing them within the Earth, and covering them.

The LILLY of JAPAN.

This is a rare and curious *Exotick*, yielding a fair Branch of Flowers, not unlike to the *Martagons*. And the Sun has so great an Influence over these Flowers, that when it shines on them, the whole Flower seems chang'd, and resembles Cloth of Gold. But the Root never produces any more Flowers after once blowing.

GERANIUM.

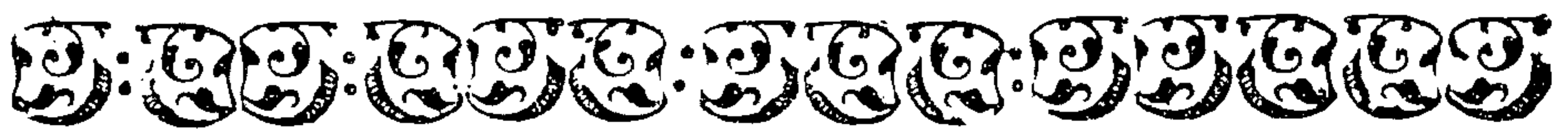
Geranium nocte olens, which smelleth pleasantly in the Night only, is a tender Plant, and very well deserves a Place in your Conservatory.

The *Aloe-Tree*, or *Sedum*, and its Managements, vide *Kalendarium Hortens. Mens. Novembris*.

There

There are several other fine tender Plants, of less Note, likewise worthy of Place in your Conservatory ; as the *Tuberoſe*, *Hyaconth*, *blew Borage-leav'd Auricula's*, *Bears-Ear*, *Sanicle*, the *Indian Bay*, &c. and many other Flowers and Shrubs, particularly mentioned in my preceding Accounts of them.

For the Preservation of ſuch Plants that are tender, and yet will not endure houſing, the beſt Method is to put them into Holes made in the Ground, under a South Wall, Pots and all, ſo as to be two or three Inches lower than the Surface of the Earth, covering them with dry Moſs ; and then put Glaſſes over them, and in all warm Sun-ſhine Days, and in moderate Showers of Rain, uncover them, for the Benefit of the Air and natural Moisture ; thus governing them 'till *April*.



CH A P. V.

Of other Greens more hardy, that will endure the Cold, EVER-GREENS, &c.

MR. *Laurence*, in his firſt Part of this Work, only juſt mentioning the interment of the Seeds, and ſome few general Hints relating to the Management of the *Eugh*, *Juniper*, *Phillyrea*, *Holly*, and ſome other *Ever-Greens* ; I ſhall make it my Buſineſs, in this Chapter, to enlarge a little upon the particular Culture of thoſe Trees, and to give you an Account of divers other Winter-Greens, and Trees equally valuable, that are entertain'd in Gardens, Avenues, Walks, Wilder-
neſſes

nesses, &c. so as to make up, with the first and second Parts of this Work, a compleat System of all Parts of Gardening, except the Kitchen-Garden, with common Observations easily acquir'd and the Assistance of my *Kalendarium Hortense*, in the Close of this Work, sufficiently perfects. The first Tree I shall treat of in this Chapter, is the *Laurus-Tinus*.

The *L A U R U S-T I N U S*.

The *Laurus-Tinus* is a delightful Shrub, yielding odoriferous white Blossoms, both in Summer and Winter. It is encreased by Suckers or Layers; and there's very little Difficulty in the Culture. For Variety, it has two Sorts, the Broad-leav'd, and the Narrow-leav'd; and as well these as the *Alaternus*, *Bay* and *Philyrea*, are generally admitted Place in the Conservatory, with your *Pereunial Greens*, tho' they are a great deal more hardy.

The *ALATERNUS*.

This Green we have from *Languedoc* in *France*; it thrives very well in *England*, being easily propagated by Seeds, which are so quick in Vegetation, that they'll appear within a Month after interr'd. These Trees are likewise encreas'd by Cuttings, and make the most useful and beautiful of Hedges; but this is not all their Use, they cover a Seat or Bower most neatly in a very short Space. They are esteem'd a Species of the *Philyrea*.

The *P H I L I R E A*.

The *Philyrea* is esteem'd one of the most pleasant Plants that Nature produceth; it spreads so
fairly

fairly and near the Ground, rises to that Height, and is so easily manag'd, that you meet with entire Satisfaction in it. There are two Sorts of this Tree, the one with a small edg'd Leaf, yielding plenty of Blossoms, but of a strong Scent; and the other of a larger Leaf, less edg'd; which last is most beautiful, Both Sorts are encreas'd by Seeds or Layers, and sometimes by Slips gather'd after a Shower of Rain in the Spring. They are to be planted Abroad at two Years Growth, but will not fairly bear a Remove, until the coldest Seasons are over, tho' afterwards they'll endure the most severe Winters; and upon any Decay of the Tree being cut off near the Ground, the same will reassume its former Glory. These Greens fill a Wall very handsomely, and make the thickest and most lofty Hedges of any Tree whatsoever of its Substance; for being planted in single Rows, at about two Foot Distance: Some Gardeners affirm it will produce a Hedge of a Yard thick, and fifteen or twenty Foot High, There's likewise a gilded *Philyrea* and *Alaternus* variegated with White, both very pleasant Trees. The Strength of Sap in this Tree, and all other *Ever-Greens*, fortifies them against the Cold, and preserves them in the Winter.

The L A U R E L.

The *Laurel* is the Tree of Glory; with whose Branches the ancient *Romans* us'd to crown the Heads of their greatest Emperors, in their most magnificent Triumphs: And the Branches of the *Laurel* are not only Emblems of Victory, but also of Peace, and Excellency in any ingenious Science, &c. It is a Tree of the greatest Ornament,

and will gracefully fill your Wall, or beautify your Parterre in Standards, being kept prun'd to the Shape of the *Orange-Tree*. It is rais'd by Berries or Layers, but the last Way is to be preferr'd. This Tree will endure the most scorching Beams of the *Sun*, and thrive against the most shady Wall, and will arrive to twenty or thirty Foot in Height, if permitted : It delights in moist Ground, and no Weather will annoy it. These Trees require to be new planted, or abated to the Roots, once in six or seven Years ; and there is a fine gilded Sort of them.

The B A Y.

The *Bay* is a handsom odoriferous Tree, but not so beautiful or hard as the *Laurel*. This Tree is likewise to be kept to the Shape of the *Orange-Tree*, when it makes a good Standard. It is propagated by Seeds or Berries gather'd in *January*, and laid aside till they have done sweating, when they are to be interr'd in a very rich Soil, or in an entire Bed of *Dung*, as you sow Pease. This Tree may likewise be rais'd by Slips set in *March* ; it thrives best in a hot gravelly Ground, well shaded and defended from Winds ; and Culture about the Roots contributes very much to its Vegetation. The *Bay* in Growth resembles the *Laurel* ; and as there is an Emblem of Victory and Pre-excellency in any Science, &c. so is the *Bay* an Emblem of Excellence in Wit and polite Literature ; our greatest Poets being pictur'd in a monumental Way, with a Coronet of *Bays*.

The E U G H.

Eugh-Trees being kept clipt, and reduc'd to regular Forms (the most beautiful whereof, are the round and square Pyramid) make the most ornamental Trees you can have in your Garden ; and are no less hardy than beautiful, for they'll endure all Weathers, and keep perpetually green. These Trees are encreas'd by Berries, which will be the second Winter before they shoot ; at three Years Old, you may safely transplant them. When you clip them, take Care not to do it in a cold Season.

The J U N I P E R.

The *Juniper* is a delightful Winter-Green, and altho' it is common in the Woods, yet merits a Place amongst the choicest Plants. It is rais'd by Seeds, which are of a much quicker Growth than the Berries of the *Eugh*, for they'll come up in two Months Time ; and it may be increas'd by Plants gather'd in the Woods. It grows either tall or spreading, according to its Management, like the *Cypress*, and is like the *Eugh*, capable of any Form.

The H O L L Y.

The common *Holly*, in the Opinion of the famous Mr. *Evelyn*, deserves Place amongst the most select Greens and Plants. And the gilded *Holly*, which claims the Preference of all gilded Vegetables, is certainly the most excellent of all perennial Greens, the Bark of this Tree and Berries, as well as the Leaf, is variegated with a bright Yellow ; and the more yellow the Leaf is,
the

the more beautiful is the Plant. These Trees are increas'd by Berries, cultur'd like the *Eughs*; they are of a slow Growth in Standards, but being planted in Hedges, they will vegetate as fast as Quicksets. Your gilded Trees or Plants ought to be increased by Layers or Slips, or Grafts; for it is observ'd, That they are very apt to degenerate when raised by Seed. And the *Holly*, the *Eugh* and the *Fir*, and also the *Laurus-Tinus*, the *Bay*, &c. are hardy Plants, and will bear a Winter Removal, But the other more tender Plants are not to be remov'd, but in the Warmth of the Spring.

The B O X.

This Tee was very much in Request in former Times when few fine Gardens were without some of them, they being very convertible to any Form or Shape; and being of a never-dying Nature, made them valuable; but they are now disregarded, unless it be the gilded *Box*, which makes a pretty Variety in a golden Grove. The Common sort of *Box* makes a very good Hedge; and the Dwarf Kind of it, makes an excellent Edging for Borders. Both Sorts are encreas'd by Slips set in *March*.

The C Y P R E S S and C E D A R.

This is the most celebrated Tree that our *European* Parts produce; being the most streight and uniform Tree of any other, and throughout the whole Year preserves its Verdure. Its natural Climate, is *Candia*; and the Seed here in *England* seldom ripens, so that you are oblig'd to have it from
foreign

foreign Countries. This Seed you are to sow in *April*; and when 'tis come up, you may at your Pleasure remove the Plants, keeping them well weeded, and giving them due Watering. You may clip this Tree into a Pyramidal Form, when it makes it a beautiful Standard; and it likewise makes very good Hedges. If these Trees are not planted in an over-moist Soil, they'll endure the severest Frosts and sharpest Winds. The *Cedar* is only regarded for the Rarity of it, not for its Beauty.

The F I R and P I N E.

Firs and *Pines*, as the ingenious Mr. *Laurence* well observes, delight in a cold Soil, of a large Mixture of Clay; but they thrive very well in a barren gravelly Soil, tolerable moist. These Trees are propagated by Kernels, and Nuts sown in Earth, turn'd up a Foot at least in Depth, and riddling Earth over them; the Season for their sowing, is in *March*. The Seed thus sown, will shoot in about six Weeks Time, when you may transplant them, observing to give them a good Watering before you remove them, and pruning the Root before interr'd; but by no Means touch their Heads, which would destroy their Beauty in their Growth. The *Pine-Nuts* are gather'd in *June*, and sown in *February*. These Trees do not delight in transplanting; and when there is a Necessity for their Removal, cut neither the Head nor the Foot. The *Fir-Tree* is common in the Woods, but by Reason of its streight, slender, and aspiring Trunk, and the Regularity of its Branches, it deserves a Place in your Gardens; especially being planted at the Corners, or in the Center of your Squares,
or

or Grass Plots, or in direct Lines at a little Distance from your Walks. This Tree will bear clipping, and is easily manag'd with the Shears.

The C H E S N U T.

The most agreeable Soil for this Tree, is a light Sand ; or any light Soil will answer your Expectations. This Tree is rais'd by Nuts, sown in the same Manner as you do *Beans*, and will not well bear transplanting, which very much hinders its Growth ; but if you do transplant them, let it be perform'd in *November*, and take care to prune the Heads and Roots. These Trees may be kept to a small Size, with delicate round Heads, by repeated Clippings ; and at certain Seasons they bear a beautiful Flower, and in a few Years the Flowers are succeeded by Nuts in the form of *Chestnuts* ; they make a very agreeable Walk to terminate your Parterre ; or at a little Distance from your Garden, they'll make a most beautiful solitary Walk, being permitted to rise to their full Growth.

The P L A T A N U S.

This Tree was very much admir'd by the ancient *Romans* ; but more for its Shade, than any other Quality, as it absolutely excludes the Beams of the Sun in the Summer ; and the World doth not yield its Equal for that Purpose. It delights in a moist Ground, and being constantly water'd whilst it is young, will soon arrive to your desir'd Stature. The Branches are slender, but the Leaves very broad, and the Tree grows to a very large Extent. *Pliny* tells you, that the Emperor *Caligula* had one of these Trees in his Territories, which
was

was so very large that it contain'd a capacious Room within; wherein fifteen Persons might sit at a Repast, and yet Space enough left for their Servants to wait on them.

The EVER-GREEN OAK, TREE of LIFE, &c.

The *Ilex*, or *Ever-Green Oak*, is a very hardy Tree, but slow in its Growth; and is propagated by Seeds or Layers. This Tree claims a Place in your Garden.

The *Arbor Vitæ*, or *Tree of Life*, may deserve Plantation, to make up the Number of your Greens, and more for its Rarity than Beauty; as the *Savin*, which is a Tree very much like it. It is call'd *Arbor Vitæ*, from its ever green and hardy Leaf; is rais'd from Seeds or Layers, and bears a Flower in *May*.

The GLASTENBURY THORN.

This is, in Appearance, a vulgar *White Thorn*, yielding Plenty of Blossoms in *December*; sometimes it is in Blossom exactly at *Christmas*, but that depends very much upon the Weather; an over mild Season will cause it to blow sooner, and a very severe Season may retard it 'till after that Festival is over; the Blossoms are succeeded by Berries and Leaves, as the ordinary *White Thorns* are in the Summer. This Tree may be rais'd by the Seed, but the most expeditious way is by grafting it on a common *White Thorn*.

I shall close this Chapter with some general Observations concerning Plants and Trees; and particularly to check a luxuriant Growth, which

is oftentimes very pernicious. When any of your Trees or Plants are inclinable to an Excess of Growth, you need only transplant them into Pots, and remove them into the Shades, and you'll find the Vigor sufficiently abated: By this easy Means, the Beauty of the Tree will be effectually preserv'd. And this Management I have experienc'd, is sometimes attended with further good Consequences; for I have known it cause Greens to be strip'd, and promote an agreeable Variegation.



C H A P VI.

*Concerning Plantations in AVENUES,
WALKS, WILDERNESSES, &c.
and the best Methods for raising, pruning, and
disposing of all lofty Vegetables.*

IN my preceding Chapters, I have given you a concise Account of the most delightful Trees and Flowers, which compleat the Beauty of the Garden and the Grove; and which give the most consummate Satisfaction, in a desirable Retreat, from the Noise and Bustles of the World; I proceed now to larger Plantations, such as *Avenues* to your House, *Walks* in your *Parks* or *Meadows*, *Wildernesses*, &c. which in my Opinion very well merit a Place in this small Treatise. Works of this Nature are too often neglected or forgotten, tho' they are not only attended with a great deal of Pleasure, but are exceeding profitable. The Beauty of these Plantations is hardly to be express'd, and the Advantage not easily credited
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by Persons unacquainted; and the Expence so trifling, that it can be no Pretence for not entering upon this commendable Work, which makes your Fields and Meadows an open Garden, and the whole Country a perfect Paradise. I begin this Chapter with the magnificent *Oak*.

The O A K.

Forest-Trees (of which the *Oak* is the principal) generally thrive well in the coarsest Land, provided there be a sufficient Depth of Mold; and no Soil is disagreeable to these Trees in general, except Clay; which, however, is an approv'd Soil for the *Oak* in particular: This Tree will also grow on a Rock, but with this Disadvantage, that the rougher the Ground, the more coarse will be the Grain of the Timber; and the higher the Ground, the smaller the Timber; tho' if the Soil be tolerable, it is made up in the Goodness of it. There are four Sorts of *Oaks*, and they are all rais'd by Acrons, collected in *November* by shaking the Trees, and preserv'd in Sand during the *Winter*. They are sown in the Spring in Ground broke up some Time before, about a Foot asunder; and when they have shot an Inch or two above the Ground, you may plant some of them abroad where they are two thick. In *June* bestow a light digging upon them, and scatter Horse Litter or Fern to preserve the tender Roots from the scorching Sun: If they are above an Inch in Height when you remove them, cut them, cut them to that Length; the second Year cut them to six Inches in Length, but be sure meddle not with the small Branches of the Roots. When you transplant these Trees, (which is necessary
twice

twice in the first six Years, to facilitate their Growth) do it in *October* or *February*, having for some Time before cut the Roots round the Tree, and fill'd in the Earth again, (which very much adds to its Safety) and laid open the Holes for their re-planting, in order to be purify'd by the Sun: And in all your Plantations, avoid planting too deep; if the Root be cover'd, it is sufficient, unless the Ground be very light: Be sure observe not to cut the Heads of any Trees design'd for Timber. The best Soil for new planted Trees, is new dug Earth of a fat Mold.

The E L M.

There is no Tree bears Transplantation better than the *Elm*, that grows faster, or arrives to a more lofty Stature, with good Management: This Tree Mr. *Eucylen*, in his *Silva*, takes Notice, you may safely transplant at twenty Years Growth, if you totally disbranch him, and give him Plenty of Water during the Summer; but you ought never to cut the Top of an *Elm*, tho' you may thin the middle Branches of it in *January*, or at any other Time of the Year when the Sap is not at highest, to reduce it to Form. And when you remove your Tree, place it as near as may be to its accusom'd Aspect. These Trees are increas'd either by Suckers seperated and planted in *October*, or by Seeds gather'd in *March* or *April*; but the former Method is most commonly practis'd, and they may be propagated by knotty Pitchers cut off and set in *January*. When you raise them by Seeds, the best Method is to till or turn up the Ground round the Tree in a light Manner, and the Seed will drop and vegetate very quick;

quick ; you may transplant them in two Years, keeping them clean from Weeds, and stirring the Earth round the Roots in the Winter, which you are to continue for at least three Years ; and in the Spring you may rub of the collateral Buds, to check the Superabundance of Sap that would prejudice the Root, before it is well establish'd ; which is to be observ'd in all other Plantations of Trees ; and you are to cut those rais'd by Seeds only the first Year, but then to within an Inch of the Ground. The *Elm* makes the most magnificent *Avenues* and *Walks* of any Tree ; and delights in a sound and fertile Land, somewhat moist.

The A S H.

This is the next best Timber to the *Oak* ; and there's two Sorts of these Trees, distinguish'd by the Names of Male and Female : They grow in almost any Soil, tho' they thrive best in the richest Land. They are increas'd by Keys, that fall about the End of *October* ; which being sown very shallow, will shoot in about a Year's Time. When they are a Foot high, you may transplant them ; but you are to prune them short, which will add to the Quickness of their Growth. The *Ash* is likewise increas'd by Pitchers. All Plantations of Trees are to be well water'd, during the first Summer, by pouring the Water at a Distance round the Tree, and not at the Stem, which would make a Passage for the Sun, to penetrate and injure the Root : And to prevent the ill Effects of scorching Heat, Heaps of Pot-Sherds, or such like Rubbish, plac'd round the Stem of the Tree, will answer your Expectation ; but then they are not
to

to continue long unremov'd, for fear of prejudicing the Tree, by harbouring Snails and Worms. The *Ash* makes a most beautiful Walk, tho' it is not so lofty or fit for *Avenues* as the *Elm*.

The BEECH.

This Tree is more frequently to be met with in *Silva's* Territories, than in domestick Walks or *Visto's*; where the Quantity of Mast an entire Wood of them produceth, is very profitable by the Oil drawn and extracted from it; besides the Use of the Timber in fine Turners Ware; but they furnish stately Walks at some Distance from your House, as in your Park or Grounds, contiguous to your Gardens, where they make an agreeable Variety: These Trees are increas'd by the Mast or Nuts, in the same Manner as the *Oak*; and almost any Soil is agreeable, but the Valleys are most natural to them: They grow to a very large Size.

The WALNUT.

The *Walnut-Tree* likewise affords a great of Profit, as well as Pleasure; its rich and valuable Fruit, and excelling Timber for the Joyner's Use, is well known to all; and there are few that are ignorant, it makes an agreeable Avenue or Walk. It is rais'd by the Nut being set, for its Preservation, in the green Husk; and is not to be transplanted without there be a necessity, and then not until it be four Years old, and taking Care not to cut the Head of the Tree. This Tree delights in a dry and healthy rich Land, a little upon the Chalk or Marl; and the most agreeable Soil, prescrib'd for these Trees, is Ashes.

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The MULBERRY.

There is hardly any Fruit more delicious than what this Tree yields ; and the Leaves are esteem'd for their producing Silk-Worms. This Tree is propagated by Seed sown in *May*, observing to give the young Plants three light Dressings or Diggings Yearly, about the Months of *April*, *June*, and *August*, the three proper Seasons, and to cover them over with long Straw in the Winter. You are to prune them yearly, and keep their Heads from spreading, until they are about six Foot high, when they may be permitted to spread moderately ; but keep them hollow like a Bell. When they are arriv'd to five Years Growth, you may safely transplant them, but without cutting the Root, tho' you may prune the Head a little. These Trees love a light dry Ground, well expos'd to the Sun ; and may be also increas'd by Layers ; wherein you are not to leave above two Buds out of the Earth, and to give them constant Waterings.

The HONT-BEAM.

This Tree is of a very hardy Nature ; it thrives best in the coldest Situation, and most barren Ground ; and by its stately Hedge, being mix'd with the *Dutch Elm*, is no small Addition to the Beauty of the Wilderness. There are very few Wildernesses or regular Groves without this Tree in the Walks, as it is not only beautiful in it self, but fills up the Hedge so compleatly, that the nicest Eye will have some Difficulty to penetrate through it ; and it is with little Trouble kept in
very

very exact Order, by the Use of the Garden-Shears. It is rais'd by Off-sets cut about an Inch Diameter, within half a Foot of the Earth, or by Seeds sown in *October*.

The LIME, POPLAR, &c.

The *Lime* is a fine Tree, and makes a pleasant Walk or Avenue, having a streight and delicate Stem, and a full beautiful Head. It delights in a rich Soil, and is increas'd either by Seeds sown in *October*, or by Suckers, and is cultur'd much like unto the *Elm*. Some Authors are of Opinion, that these Trees are a fine Sort of *Elms*.

The *Poplar*, *Abele*, and *Aspen*, come under the Name of *Aquatic-Trees*, and are frequently planted in Walks, especially in a low moist Soil not too foggy, which is agreeable to them; and for their quick Vegetation, and lofty Stature, are truly valuable. They are rais'd by Truncheons, cut off about seven or eight Foot in Length, and set two Foot into the Earth, having first fill'd the Holes prepar'd for them with Water; or they may be increas'd by Slips or Suckers from the Roots. They are prun'd in *January* close to the Body, and to within five or six Foot of the Top. The *Abele* is a fine white Sort of *Poplar*; but the *Aspen* is a paler *Poplar*, and grows not so lofty as the others. They'll all arrive to full Perfection in about twenty Years.

Other Trees of less Note.

The *Maple-Tree* is rais'd by Keys, like unto the *Ash*: And the *Sycamore* is only a Species of the *Maple*. The *Birch* is produc'd of Suckers.
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The *Hazel* is propagated by Nuts sown like Mast ; but, to fill a vacant Place expeditiously, the best Method is to cut a Branch about half off near the Stump, and lay it down, placing it in the Ground, and covering it with Earth. The *Alder* (the most useful Timber to lie under Water) delights more in a watry Soil, than any other Tree, and is rais'd by large Truncheons cut about two Foot long. *Willows* are rais'd by Stakes of five or six Foot in length, being stop'd a little sharp at the biggest End, and set two Foot into the Ground.

Observations relating to Pruning, &c.

I shall finish this Chapter with some Observations, or rather Maxims, relating to pruning. The Saw and Chisel are the best approv'd Instruments for pruning the large Branches of Trees, and the Knife for the smaller ones. Observe to prune your old Trees early, and your young Trees late ; and to cut the Branches of all Timber-Trees, except the *Oak*, clean to the Body ; but then you are not to touch the Tops. Choose seasonable Weather to perform this Work, a Medium between excessive heat and extream Cold ; and for Ever-Greens, you are not to prune them until they have produc'd new Shoots, and the Roots have taken with the Ground : And for lopping of Trees, choose a Time when the Sap is down, and the Wind is at South or West, for the North or Easterly Winds are very fatal to the succeeding Shoots.

Infirmities of Trees, with Directions for their Cure.

For Diseases and Infirmities of Trees, a discretionary Pruning and Transplantation are the
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general Remedies : Blasted Parts and Canker are to be cut away to the Quick, and the Scars to be emplaster'd with Tar and Oyl mingled together, (the best Medicine for Wounds in Trees) or Clay and Horse-Dung. Bark bound may be relieved by making an Incision with your Knife, Rind-deep, from the Root of the Tree upwards, as far as you can reach, in *February*, and filling up the Slit with Cow-Dung. You may likewise disbranch your Tree a little.

Thus I have gone through my several Chapters of Flowers, flowering Shrubs, and their Culture ; of *Exoticks*, *Perennial Greens*, and other tender Plants, with the Conservatories for them ; of *Ever-Greens*; Plantations in *Avenues*, *Walks*, *Wildernesses*, &c. I come now to my *Kalendarium Hortense*, which compleats this Work.

Kalen-

Kalendarium Hortense :

O R,

The Gardener's Kalendar, containing necessary Directions for the several Monthly Works in the Parterre, Flower-Garden, and Kitchen Garden, throughout the Year.

BEfore I enter upon my *Kalendarium Hortense*, I shall lay down some Rules universally approv'd for making of a hot Bed, which is so necessary for the Vegetation of all Manner of tender Plants, Flowers, &c. and so frequently mention'd in this Treatise, particularly in the ensuing *Kalendar*. The following Directions will serve for the making of a hot Bed fit for all Conveniences.

In some Part of your Nursery, Orchard, or Kitchen-Garden, well expos'd to the Sun, and 'tis so much the better if under a Warm Wall, defended from the North-East, and South-westerly Winds, choose your Situation. Your Situation thus chosen, and the Extent of your Bed being mark'd out, as your Occasion requires (wherein four Foot is the usual Breadth) drive Stakes into the Ground on every Side, about a Foot asunder; and being a Yard above Ground at least, wind the

Stakes round with Rods in the Nature of Wat-
tling, or rather with Rope made with Hay or Straw,
then fill it with new Horse-dung and wet Litter,
(the Dung having been thrown up in one Cor-
ner of your Stable, 'till you have got a sufficient
Quantity) treading it down very hard at three se-
veral Times in the filling, so that the whole may
be of an equal Hardness. Your Bed so made, fix your
wooden Frames, fitted to the same for the Reception
of the Mould, at Top, and for the Support of the
Glass Frames for covering slope-ways ; in the do-
ing whereof, Care is to be taken that there be suf-
ficient Room left both for your Earth and the
shooting of your Plants : Then put in rich sifted
Earth of the best Mould you can get, four Inches
thick ; or, what is preferable to it, the Earth of
an old hot Bed well rotted, The Bed must be co-
ver'd with Matts, or Straw, supported with short
Sticks, and remain about a Week before it will a-
bate its extream Heat, so as to be in a fit Temper
for Use ; which you may know, by thrusting a
small Rod as far into the Bed as you can, and then
after its being in some Time, pull it out, and you
may feel the Heat with your Fingers : It ought
to be warm and not hot ; and when the Heat
lesseneth at any Time, you may renew it by ap-
plying new Dung to the Sides of your Bed ; or it
may be done by stirring of the Bed. You may
make a Bed to raise a Sallad in a few
Hours, by the Assistance of powder'd Lime and
hot Dung, the Dung being in the middle, and the
Lime underneath and at top ; and that cover'd
with fine rich Mould.

When your Plants, Flowers, &c. are come up,
be sure you give them Air at proper Seasons, and
acquaint them with the Sun by Degrees ; and when
they

they are strong, remove them either to a second hot Bed, less hot, or into very rich Earth in your Garden, keeping them from the Mid-day Sun, 'till well settled, and giving them often but gentle Waterings. Your moveable Frames for hot Beds, so much approv'd, are very intelligibly describ'd by Mr. *Laurence*, in the second Part of this Work.

J A N U A R Y.

The Works in the Parterre and Flower-Garden, are very few at this severe Time of the Year. About the middle of this Month, you may plant your late *Anemonies* and *Ranunculus's*; and preserve from continual Rains, and other bad Weather, your earlier Sorts of those Flowers sown in *September*, and your *Carnation* and other Seeds, by Mattings, or other supported Coverings. New Earth, with light Mould, the Roots of *Auricula's* where 'tis wanting, and fill up the Chinks round the Sides of the Pot. You may plant in this Month *Roses*, *Woodbines* and *Virgin's Bower*. Keep your Greens warm in your Conservatory, set up Traps for Vermine, and pick Snails from Fruit-Trees, &c.

In the Kitchen-Garden prepare Soil, and use it where there is Occasion: Trench Ground in a Readiness for the Spring; dig Borders, and continue to uncover Roots of Trees; plant Quicksets, and transplant Fruit-trees; set Vines, and begin to prune the old ones: Prune the Branches of long planted Fruit-Trees; and if you have Occasion to cut off a whole Branch or Limb, cut it close to the Body of the Tree, that the Bark may the sooner cover it. Keep your Wall and Pallisade-Trees from mounting too hastily; take a-
way

way the shaded Under-Boughs of Standards that remain smooth without Buds ; where Branches are so thick that they gall one another, thin that Place with Discretion, but forbear pruning Wall-Fruit-Trees, that are tender, until the next Month. You may begin to nail and trim your Wall-Fruit. Gather Cions for Graffs from plentiful bearing Trees not young, before the Buds sprout ; and graff Pears, Cherries and Plumbs in the Stock, at the latter End of the Month. Remove your Kernel Stocks to more commodious Distances in your Nursery, and lay Slips of Trees. Cleanse the Mould, &c. from Trees in a moist Season. Sow early *Colly-Flowers* ; sow *Chervil*, *Lettuce*, *Raddish*, and other fine Sallading in hot Beds. Set early *Beans* and *Pease*, &c.

The Produce of this Month is small. We have (of Flowers) *Cyclamen*, *Hellebore*, early *Winter-Hyacinth*, *Hepaticæ*, *Primroses*, *Mezereon-Flowers*, &c. In the Olitory, *Carrots*, *Turnips*, *Parfnips*, &c. and *Cellery*, *Onions*, *Chervil*, *Mint*, *Cresses*, &c. in hot Beds. And some Winter Apples and Pears in the Orchard.

F E B R U A R Y.

Sow in the Parterre and Flower-Garden, some *Aricula* Seeds, and your *Alaternus* Seeds in Cases or open Beds, defended from Winds, and secur'd from great Rains ; so likewise your *Larkspurs*, and *Fraixnella* Seeds ; plant *Cowslips*, *Oxslips*, &c. Give your hous'd *Carnations* frequent Airings in warm Weather, and mild Showers of Rain ; but place them in your Conservatory at Night : Keep close your Green-house ; water *Orange-Trees*, &c. that if Necessity require it, with Water wherein Sheeps Dung

Dung hath been steep'd two or three Days in the Sun ; but let it not touch the Leaves which would destroy them. Continue to set Traps for Vermin, &c.

In the Kitchen-Garden prune Fruit-Trees ; for now is the Season to Bind, plash and nail, without Hazard ; wherein endeavour to apply the collateral Branches of Wall-Fruit as near as may be to the Ground, which will advantage the spreading of the Tree. Remove Grafts of former Years ; cut and lay Quicksets ; trim up Palisade-Hedges ; continue to plant Vines ; set all Sorts of Kernels and stony Seeds ; lay Branches to take Root ; earth up the Roots of uncover'd Fruit-Trees ; drain away superfluous Moisture from Roots of Fruit-Trees, which occasions Mould, &c. About the latter End of this Month graft *Apples, Pears, &c.* in the Clift, and so continue till the latter End of *March*, when the Sap rises briskly ; the New Moon is the best Time, and the Old Wood is most fit to be chosen. Plant out your early *Colly-Flowers* ; sow early *Sallading* in hot Beds ; prepare your hot Beds for the first *Melons*, and *Cucumber* : : Sow *Pease, Beans, Marigolds, Annis-Seed, Radish, Spinage, Asparagus, Parsnips, Carrots, Onions, Garlic, &c.* and plant *Potato's* ; plant out your early *Cabbage Plants*. Continue to rub off Mould from Trees after a Shower of Rain, and scrape and cleanse them from Cankers, &c.

For Produce of this Month we have of Flowers, *Anemonies*, some early *Double-Tulips*, and *Hyacinths*, the *Vernal-Crocus*, *Black-Hellebore*, *Hepatica*, *Persian-Iris*, *Cyclamen*, *White and Red Mezerions*, *Bulbous-Violets*, early *Daffodils*, *Primroses*, *Oxslips*, &c. In the Olitory-Garden, *Sallads*, *Radishes*, &c. and

in the hot Beds, you may have *Asparagus* ; and in your Orchard, a few *Apples* and *Pears*.

M A R C H,

In the Parterre and Flower-Garden, stake up your weak Plants, to defend them from the Winds ; sow *Auricula-Seeds*, *Carnations* and *Pinks* ; sow likewise *Stock-Gilliflower* Seeds in the Full of the Moon for double Flowers, and towards the latter End of the Month, sow late-bearing Flowers, and your rare *Exotick* Plants in hot Beds : Plant late-bearing *Anemonie* Roots, watering them well once in two or three Days, if the Weather be dry ; set into the Ground the Roots of *Marvel of Peru*, transplant fibrous-rooted Flowers, such as the *Auriculus* *Narcissus*, *Tuberoſe*, *Hepatica*, *Gentianella*, *Hellebore*, and other Summer Flowers : Slip Wall-Flowers, *Lupines*, *Jessamines*, &c. You may likewise transplant *Carnation* Seedlings, in fresh Earth, observing to set them in the Shade for a Week. Carry into the Shades your *Auricula's* Seedlings, and other choice Plants in Pots : Cover choice *Tulips*, *Anemonies*, *Auricula's* and other tender Flowers and Ever-Greens, with Mats or Canvas, &c. from the farwel Frosts and Easterly Winds ; but about the End of the Month, you may uncover your choicest Plants, tho' with great Caution ; and so likewise at all other Times in benign Seasons. Plant *Box*, &c. in Parterres ; sow *Pine-Kernels*, *Fir-Seeds*, *Bays*, *Alaternus*, *Phylirea*, and most Sorts of Perennial Greens, &c. And if the Weather be both moist and mild, you may transplant the hardiest Sorts of *Ever-Greens*. At the latter End of this Month, you may lay open the Doors and Windows of your Green-Houses and Conservato-

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ries in the Middle of the Day, for eight or ten Days, to acquaint them gradually with the Air ; but trust not too confidently to the Nights, unless the Weather be thoroughly settled.

In the Kitchen-Garden, you may graff all this Month *Apricots*, *Nectarines*, and *Peaches*, *Pears*, *Apples*, &c. unless the Spring be very forward ; prune young *Murals*, and other tender Wall-Trees ; prune last Year's Graffs, and cut off the Heads of budded Stocks ; top *Rose-Trees* ; cut *Quicksets* ; plant *Peaches* and *Nectarines* ; stir new planted Ground. In the Middle of this Month, dress up your *Strawberry-Beds*, keeping them clean from Runners 'till they blossom ; give them Watering when necessary ; in a very dry Season you can't well water them too much ; and in watering of Flowers, &c. newly planted, do it at a convenient Distance, not over-hastily, or with too great a Stream, and so as to moisten the Ground without affecting the Leaves, which would cause them to scorch : Uncover *Asparagus*, and loosen the Mould about them, giving them a little fresh Manure : You may now likewise transplant *Asparagus* Roots for new Beds : Uncover your *Artichokes* cautiously, and so likewise your *Fig-Trees*, taking off the dead Wood : In your hot Beds, sow Seeds of *Melons*, *Cucumbers*, &c. which eight Days after sown will be fit to be prick'd forth at Distances ; keep your hot Bed as much as is possible from Rain. Sow in the Beginning of this Month *Endive*, *Succory*, *Leeks*, *Radish*, *Beets*, *Par-snips*, *Skirrets*, *Chervil*, *Sampier*, *Parsley*, *Sorrel*, *Bororage*, *Sellery*, *Smallage*, &c. sow also *Lettice*, *Onions*, *Garlick*, *Purslain*, *Turnips*, *Monthly Pease*, *Carrots*, *Cabbages*, *Cresses*, *Marjoram*, *Basil*, &c. plant *Artichokes*, *Strawberries*, *Cabbage-Plants*,
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and transplant the *Beet Chard*, and any Sort of Medicinal Herbs ; slip and set *Sage*, *Rosemary*, *Thyme*, &c. Where the Soil is Clay, or over-moist, mingle it plentifully with Brick-Dust.

The Products of this Month, are of Flowers ; the *Violet*, *Anemonie*, *Spring-Cyclamen*, *Hepatica*, *Tuberous Iris*, *Hyacinth*, *Narcissus*, *Funquil*, *Dutch Mezerion*, *Persian Iris*, *Præcoce Tulips*, *Arbor Indæ*, double and single *Primroses*, *Wall-Flowers*, &c. In the Olitory, *Lettice*, *Radishes*, &c. *Asparagus*, *Colliflowers*, &c. and in the Orchard some *Apples* and *Pears*.

A P R I L.

In this Month, whatever you have a Mind to plant or sow, the Earth is fit to receive : In the Parterre and Flower-Garden, sow *Columbines*, *Holliocks*, *Lupines*, and other Annuals, to have Flowers all the Summer ; continue to sow *Pinks*, *Carnations*, and trim the old Roots from dead Leaves ; transplant fibrous Roots left unfinish'd in *March*, for this is the better Season ; continue to sow *Pine-Kernels*, &c. and perennial Greens ; continue likewise hot Beds for Exoticks and other tender Plants ; slip and set *Marum* ; take out of your Conservatory the *Indian Tuberoses*, parting the Off-sets with Care : Set out and expose the *Flos Cardinalis*, *Water Anemonies*, *Renunculus's*, and other Plants in Pots and Cases once in two or three Days, if the Season requires it. Prune *Anemonies*, &c. and *Carnations* where they mat too thick ; and defend from violent Storms, Remains of Frosts by Night, and scorching Heat of the Sun by Day, your *Tulips*, *Anemonies*, *Auricula's*, &c. The Beginning of this Month, prune the

the Tops of such Trees as have shot above four or five Inches; graff by Approach *Oranges, Lemons, Pomegranates, Jessamines, &c.* and towards the End of the Month you may, if you think fit, transplant and remove those tender Shrubs, they having first began to sprout, and taking Care to place them a Fortnight in the Shade: At this Time, if the cold Winds are past, you may clip your *Philyreas, Alaternus, Myrtles, Cypress, Box, &c.* after a Shower of Rain, and water the *Box* on its Clipping, to prevent the ill Smell. In the Beginning of this Month bring your choice and tender Shurbs, &c. out of your Conservatory, chusing a fair Day for that Purpose; but your *Orange-Trees* may remain in the House 'till *May*, unless the Weather prove very kind: When you bring out your *Orange-Trees*, give them a Refreshment of Water, heated Blood-warm, which is the fittest Temper upon all Occasions; for cold Water, especially Spring and Pump Water, are very pernicious; about four Gallons of Water will serve twenty Trees. Keep your Garden clean; and digging Borders half Spit deep, and stirring the Earth about *Mural Trees*, is a very good Culture, and the most effectual Method to destroy the Weeds.

In the Kitchen-Garden, sow sweet *Marjoram, Hyssop, Basil, Thyme, Winter-Savory, &c.* (stirring up the Earth, and giving them new Mould) and all fine and tender Seeds that require the hot Bed. Sow likewise *Radish* and *Carrots* together in the same Bed; and *Lettice, Purslain, Sampier, Parsnips, Carrots, &c.* on the same Ground, gathering each Kind in their Seasons, and changing the Ground for *Carrots* and *Parsnips* now and then; thin and weed them when about two Inches high:

Dress *Artichokes* when they are a little shot forth, and plant the Slips, &c. Plant out *Colliflowers*, set *French Beans*, sow early *Turnips*; continue to slip *Rosemary*, *Thyme*, *Sage*, *Lavender*, &c. and the oftner you clip them, the better they thrive: Now give the *Peach* a second Pruning, shortening the Branches just above the knit Fruit; prune *Strawberries*; and to have Salladding all the Year, sow *Turnip-Seed*, *Radish*, *Lettice*, *Purslain*, *Borage*, *Tarragon*, &c. in very rich Ground, and in the Winter on hot Beds cover'd, &c. which being drawn Root and all as soon as they open in a small Leaf, make an excellent Sallad; this you may repeat Monthly. Towards the Middle and latter End of this Month, begin to plant forth *Melons* and *Cucumbers* in your Ridges well prepar'd for them, (keeping them moderately water'd in a dry Season, from their first Rising to their Ripening) and sow Seeds for a second Crop; sow and transplant *Radishes*, *Lettices*, &c. every Fortnight.

For Produce we have in this Month, of Flowers, *Anemonies*, *Ranunculus's*, *Auricula's*, *Crown-Imperials*, *Cyclamen*, *Bell-Flowers*, *Gentianellas*, *Hypericum Frutex*, double *Hepaticas*, *Florence Iris*, *Tufted Narcissus*, *Comslips*, *Lady's Smocks*, *Medias Tulips*, *Persian Lillies*, *Peones*, double *Jonquils*, *Persian Jessamine*. *Lilac*, *Cherry Blossoms*, *Peach Blossoms*, &c. In the Olitory we have *Asparagus*, *Cucumbers*, &c.

M A Y.

Sow *Clove-Gilliflowers* in the new of the Moon, and plant *Stock-Gilliflowers* in Beds, full Moon; plant single *Anemonies*, transplant your *Amaranthus's*; prune *Jessamines* close within half an Inch;
cut

cut the Stalks of such bulbous Flowers you find dry ; shade *Carnations* and *Gilliflowers* after Mid-day ; continue watering *Ranunculus's* ; and towards the End of the Month take up those *Tulips* which are dry'd in the Stalks ; cover the Roots of those you find bare ; and if you find any to be canker'd, burying them in the Earth is the best Remedy ; gather such *Anemonies* Seed which you find ripe ; plant and remove Winter-Greens, and tender Shrubs. Now you may bring your *Orange-Trees*, and more tender Curiosities, out of your Green-house, and expose them with Safety, especially when you observe the *Mulberry* Tree begins to put forth and open its Leaves ; when you may likewise transplant and remove them without Danger, brush and cleanse them from Dust ; those you don't take out, fresh Earth them with rich Soil about a Hand's Depth, and loosen the rest of the Earth ; and those you take out, if you don't transplant or remove them, amend the Surface of the Earth for about an Inch or two in Depth, with well consum'd Cow-Dung : When you transplant or remove *Orange-Trees*, &c. Do it carefully, without injuring the Body ; let the Cases be fill'd with a Composition of natural Earth, taken just under the Turf of a wellfodder'd Pasture-Ground, and Cow-Dung or Horse-Dung well rotted ; or some use with it very mellow Soil skreen'd ; if this be too stiff, sift a little Lime or Cole-Ashes with it ; and some add a third Part of the Bottom of Tanners Pits to their *Orange* Composts, where to be had ; but where there is to be found a natural Earth with an Eye of Loam in it, mix it with well-consum'd Horse-Dung, and something of a drying Nature, as Sea-Coal Ashes, and you need seek no farther. When your *Orange-Trees* are so remov'd

remov'd, give them frequent Waterings, but without wetting either the Stem or the Leaves ; set them in the Shade for a Fortnight, and then acquaint them with the Sun by Degrees.

In the Kitchen-Garden, continue to sow sweet *Marjoram*, *Basil*, *Thyme*, &c. sow *Purslain*, *Lettice*, *Endive*, *Radishes*, &c. plant out *Cabbages* and *Colliflowers*, *Sellery*, and *Beet Chard*; transplant *Samphire* under a South-Wall ; look carefully to your transplanted *Melons*, and at the latter End of the Month you may venture to uncover them : Graff *Fig-Trees* by Inarching ; prune *Fig-Trees*, and give a third Pruning to *Peaches*, taking away and pinching off unblossoming Branches ; and remember to take away all dry'd wither'd Branches from Wall-Trees, and to cleanse them from Snails, &c. water new-planted Trees, *Asparagus*, &c. if the Weather be dry. You may in this Month begin to Inoculate if you find your Buds ready.

In this Month we have in the Parterre of Flowers, some *Anemonies* and *Ranunculus's*, *Roses*, *Pinks*, *Tulips*, *Columbines*, *Iris's*, *Fraxinella's*, *Shrub Night-Shade*, *Peonies*, *Lillies*, *Lady's-Slipper*, *Stock-Gilliflowers*, *Star-Flowers*, *Bell-Flowers*, *Fritillaries*, *starry Jacinths*, *Gentianella's*, *Auricula's*, *Wall-Flowers*, *Snap-Dragons*, *Campanella's*, *Mollis*, *Honey-Suckles*, &c. In the Kitchen-Garden you have *Sallading*, *Asparagus*, *Cucumbers*, *Pease*, *Strawberries*, &c. And in the Orchard *Apples* and *Pears*, and some early *Cherries*.

J U N E.

In the Parterre and Flower-Garden, sow some **Annuals for late Flowering** ; transplant your
Autumnal

Autumnal *Cyclamens*; take up the *Iris Chalcedon*, and also your choicest *Anemonies* and *Ranunculus*'s after Rain, the Stalks being wither'd; take up your *Tulip* Bulbs, and bury such as you find naked; take up all Plants and Flower Roots as will not endure to be out of the Ground, and replant them immediately, such as the early *Cyclamen*, the *Jacincts*, *Iris*, *Crown-Imperial*, &c. set Slips of *Myrtle* in some cool and moist Place: In the Middle of this Month inoculate *Jessamines*, *Roses*, and some other rare Shrubs; sow *Anemonie* Seeds; begin to lay your *Gilliflowers*; gather ripe Flower-Seeds worth saving, as the *Auricula*'s, *Ranunculus*'s, &c. Shade your *Carnations* from the Afternoon Sun: Preserve *Gilliflowers* now blown, for Seeds, that they may have Sun enough to ripen.

In the Olitory-Garden, sow *Lettice*, *Charvil*, *Radishes*, &c. for young Sallading. About the Middle of this Month, inoculate *Peaches*, *Apricots*, *Cherries*, *Plums*, *Apples*, *Pears*, &c. Cleanse Vines of exuberant Branches; gather Herbs in the full of the Moon, to keep dry, drying them carefully in Heaps, by often turning as you do Hay, whereby they'll retain their Virtue and Smell: And to preserve the Colour of Herbs and Flowers, dry them in the Shade, shewing them to the Sun a little only to prevent their being musty: Water lately planted Trees, and put moist and half-rotten *Fern*, &c. about the Foot of the Stems, to preserve them from Droughts; for the scorching Sun, as well as bad Weather, in this and the two former Months, do frequently endanger the Fruit. Sick Trees, such as *Orange-Trees*, &c. impair'd by removing, and other Accidents, are many times recover'd by a Milk-Diet, as Mr. Evelyn calls

calls it ; that is, diluting with a Portion of Water discreetly administer'd ; sometimes also by plunging them in the hot Beds, or by letting the Tree down into a Pit of four or five Foot in Depth, covering the Head and the rest of the Tree. Water your *Melons*, *Cucumbers* &c. Stir up stiff Ground, to preserve it from chopping.

The Products of this Month are, of Flowers, your *Lillies*, *Molies*, *Carnations*, *Asphodils*, *Iris's*, *Cornflags*, *White Hellebore*, *Bell-Flowers*, *Pinks*, *Sweet Williams*, *Campions*, *Queen Gilliflowers*, *Columbines*, *Snap-Dragons*, *Larks-Heels*, *Sultans Flower*, *Stock-Gilliflowers*, *Hollihocks*, *Martagons*, *Spanish Broom*, *Jessamines*, *Fraxinella's Woodbines*, *Roses*, &c. In the Kitchen-Garden, *Pease*, *Artichokes*, *French Beans*, *Cabbages*, *Cucumbers*, *Melons*, and all Sorts of Kitchen-Herbs, &c. *Strawberries*, *Rasbearies*, *Goosberries*, *Currans*, *Cherries* ; and in the Orchard *Apples* and *Pears*.

J U L Y.

In the Parterre and Flower-Garden, sow *Anemonies*, keeping them temperately moist ; slip Stocks and other lignous Plants and Flowers ; lay *Carnations* and *Gilliflowers*, which you may continue to do 'till *Michaelmas* ; continue to lay *Myrtles*, *Laurels*, and other curious Greens : Graff by Approach, inarch and inoculate *Jessamines*, *Oranges*, and other choice Shrubs ; refresh the Surface of the Cales of *Orange-Trees*, &c. Sift your Beds for Off-sets of *Tulips*, and other bulbous Roots, and also for *Anemonies*, *Ranunculus's*, &c. remove seedling *Crocus's* down in *September* ; continue to cut off wither'd Stalks of low Flowers, and to cover with Earth the bare Roots, &c.

Take

Take up your early autumnal *Cyclamen*, *Tulips*, and *Bulbs*; but separate not the Off-sets of *Tulips*, &c. 'till the Mother *Bulb* be fully dry: Take up likewise some *Anemonies*, *Ranunculus's*, *Crocus's*, *Iris's*, *Crown-Imperiats*, and *Colchicums*, but re-plant the three last as soon as you have taken them out of the Ground; as you may the *Cyclamens*, but you may stay 'till *August* or *September*, e'er you take them up: Gather *Tulip-Seeds*, and let it lie in the Pods; gather also your early *Cyclamen* Seed, and sow it presently in Pots. Water new planted Shrubs and Layers, &c. as *Orange-Trees*, *Myrtles*, *Amomums*, &c. which last you cannot refresh too often. Clip *Box*, &c. after Rain. In a dry Season, take Lime, and Brine, and Pot-Ashes decocted in Water, and cast it on your Grass Plots, which will destroy the Worms, and improve the Grass; and a Decoction of Tobacco Refuse, will destroy both Worms and Weeds in Gravel Walks, and cure them, Mr. Evelyn tells you, for some Years.

In the Kitchen-Garden, sow Winter Herbs in the new of the Moon; continue to sow *Lettice*, *Radish*, &c. for tender Sallading; and to inoculate Fruit. Remove *Cabbages* for Autumn, and cut off all putrify'd Leaves from them; give plentiful Refreshments to your Wall-Fruit Trees, pouring it gently into Holes made at a proper Distance from the Stems; water young-planted Trees and Layers, &c. and re-prune *Apricots* and *Peaches*, saving young Shoots to succeed the Bearers and purge your Trees from Snails, and also superfluous Leaves, which keep the Sun from the Fruit, but leave sufficient to skreen and defend them; and towards the latter End of the Month, stop the exuberant Shoots of Vines, (if not finish'd before;) hang Bottles of Beer mingled with
O Honey

Honey near your *Nectarines*, and other tempting Fruits, to destroy the Wasps ; let such Olitory Herbs run to Seed as you would save ; sow latter Pease ; continue to cleanse all Parts of your Garden, and let not your Hough be idle when the Weeds begin to peep.

We have in this Month, of Flowers, *Carnations*, *Asphodils*, *Larks-Heels*, *Indian Cresses*, *Marvel of Peru*, *Hollihocks*, *Stock-Gilliflowers*, *Cardinals Flower*, *Passion Flower*, *Fraxinella's*, *Snap-Dragons*, *Molies*, *Lychnis Chalcedon*, *Amaranthus's*, *Gentiana*, *Corn-flags*, *Tuberous Hyacinths*, several Sorts of *Roses*, *Jessamines*, *Wood-bines*, *Virgins-Bower*, *Oranges*, &c. In the Kitchen-Garden, *Cucumbers*, *Melons*, &c. the same as in the Month of June ; and some *Peaches*, *Figs*, *Plums*, *Cherries*, *Apples*, *Pears*, &c.

AUGUST.

In the Parterre and Flower-Garden. plant *Anemonie* Roots for Winter Flowers, and transplant the Seedlings of last Year ; plant Autumnal *Crocus's*, sow *Narcissus's* and *Orential Jacinths*. About the Middle of this Month new Earth, and transplant *Auricula's*, dividing the old Roots ; and you may also sow *Auricula's* ; sow in Cases *Anemonie* Seeds, *Renunculus's*, &c. and also *Hyacinths*, *Hepatica's*, *Iris's*, *Fritillarias Martagons*, *Tulips*, &c. lightly covering the Seeds with fit Mould : Continue to take up Bulbs of Flowers ; take up your bulbous *Iris*, and sow their Seeds as also the Seeds of *Lark-Heels*, *Candy-Tufts*, *Hollihocks*, and such Plants as endure Winter ; continue to slip *Gilliflowers*. Now is the Season for budding the *Orange-Trees*, wherein you may cut off the Head of an old Tree for good Buds ;

Buds ; and 'tis good to inoculate at the Commencement of this Month : And about *Bartholomew-Tide* is the only secure Season for removing and laying out your *Perennial Greens*, *Oranges*, *Limons*, *Myrtles*, *Philyreas*, *Jessamines*, *Pomegranates*, monthly *Roses*, and whatever is very obnoxious to Frosts ; taking the Shoots in the Spring, and pegging them down in rich Earth, and well-consum'd Soil ; and being well water'd in a Twelve-month, they'll be fit to remove. Plant *Roses*, *Wood-bines*, and other Trees that are apt to bud before Winter ; gather *Alaternus* Seeds, and Seeds of other Shrubs that are ripe, spreading them to sweat and dry before you put them up.

In the Kitchen-Garden, sow *Radishes*, *Cabbages*, and *Colliflowers*, for Winter Plants ; sow *Corn-salad*, *Marigolds*, *Lettice*, *Carrots*, *Turnips*, *Parsnips*, *Spinage*, *Onions*, *Endive*, &c. strip the Leaves of *Beets*, *Carrots*, *Parsnips*, &c. to improve the Roots ; pull up ripe *Onions* and *Garlick* ; plant *Strawberries*, and pluck up *Strawberry* Runners ; extirpate the tall Stalks, and purge the old Tufts ; plant *Saffron*, transplant *Lettice* for the Winter ; pull the Roots of Plants a little out of the Ground, covering them with Mould, to keep them from running over-hastily to Seed ; *Colliflowers* overspreading, should be quite eradicated ; and if they are bury'd in a Cellar, both Root and Stalk up to the Head, they will perfect their Growth without the Sun, or exposing Abroad ; unbind and release the Buds you inoculated, and stop and prune them ; you may now prune superfluous Shoots of this second Spring, and cleanse Vines from exuberant Branches, that too much hinder the Sun ; pull up the Suckers ; and you may con-

tinue the Work of Inoculation in the Beginning of this Month ; cut away the Stems of old *Artichokes* ; clip bearing *Roses* ; gather Olitory Seeds, clipping the Herbs within one Handful of the Ground, before the Full of the Moon.

For Produce, we have, of Flowers, the *Indian Hyacinths*, *Carnations*, *Star-Flowers*, *Asphodils*, *Autumnal Cyclamens*, *Bell-Flowers*, *Champions*, *Gilliflowers*, *Hollibocks*, *Amaranthus's*, *Larks-Heels*, *Indian Cresses*, *Marvel of Peru*, *Geranium nocte olens*, *everlasting Pease*, *Lupines*, *African Marigolds*, *Virginian Martagons*, *Spanish Bells*, *Campanella's*, *Afrigans*, *Colchicums*, *Autumnal Hyacinths*, *Monthly Roses*, *Oleanders*, *Jessamines*, *Oranges*, *Pomegranates*, *Shrub-Spirea*, *Maricoc*, *Senna-Tree*, &c. In the Olitory Garden the same Produce as the preceding Month, and *Peaches*, *Nectarines*, *Apricots*, *Figs*, *Plums*, *Apples*, *Pears*, and some *Grapes* and *Mulberries*.

S E P T E M B E R.

In the Parterre and Flower-Garden, you may plant *Anemonies* of all Sorts, after the first Rains ; but it is surer to defer this 'till *October* or *November*, for fear of over Moisture ; begin to plant some *Tulips* ; plant *Daffodils*, and all fibrous Plants ; transplant *Cyclamen*, the *Iris Chalcedon*, *Violets*, *Primroses*, &c. sow *Auricula's* Seed ; continue to sow *Alaternus* and *Philyrea* Seeds, (or you may forbear 'till Spring) *Tulips*, *Iris's*, *Crown-Imperials*, *Martagons*, *Candy Tufts*, and other Annuals that will bear Frosts ; sow *Crocus's* ; transplant *Ever-Greens*, and other rare Shrubs of the last Month ; take off Layers of *Gilliflowers*, and plant them ~~Abroad~~ in Pots ; bind up Autumnal Flowers

and

and Plants to Stakes ; you may prune *Pines* and *Firs* omitted in *March* ; set your *Cardianals* Flowers in Pots for Convenience of housing ; remove your *Tuberoſe* Pots into your Conſervatory, and keep them dry, or rather take the Roots out of the Pots, and preſerve them in dry Sand, or in Paper kept in a Box in ſome dry Place near the Chimney, for they will not endure the Wet of this Seaſon. About *Michaelmas*, as the Seaſon requires, bring your *Oranges*, *Lemons*, and other choiceſt Greens and Plants, into your Green-Houſe, (ordering them with Mould as directed in *May*) but leaving open your Doors and Windows 'till the Cold is more intense ; ſet ſuch Plants as will not endure the Houſe, into the Earth ; the Pots two or three Inches lower than the Surface, &c. as directed at the End of the fourth Chapter, treating of Conſervatories, &c. Dig up Flower-Beds, that want to be renew'd,

In the Kitchen-Garden, ſow *Lettice*, *Radish*, *Spinage*, *Chervil*, *Parsnips*, *Skirrets*, &c. and alſo *Colliflowers*, *Cabbages*, *Onions*, &c. Sow likewiſe Winter Herbs and Roots, and you may yet ſow *Turnips* , plant *Strawberries* out of the Woods, ſetting them at leaſt a Foot alunder ; tranſplant moſt Sorts of Eſculent and Phyſical Plants, and alſo *Artichokes* and *Aſparagus* Roots ; bind up, and blanch *Sellery*, &c. in dry Weather ; you may ſtill releaſe inoculated Buds. Towards the End of this Month, earth up Winter-Plants, &c. Plant forth *Colliflowers* and Nurſery *Cabbages* (ſown in *Auguſt*) under Shelter ; prepare Compoſt. &c. Gather ſuch Winter-Fruits as are ripe, in dry Weather.

The Flowers which we have in the Parterre this Month, are *Amaranthus's*, *Stock-Gilliflowers*, ſome *Carnations*, *Hyacinths*, *Marvel of Peru*,

Peru, *Crocus's*, *Cholcicums*, *White Asphodils*, *Campanula's*, *Sun-flowers*, *Indian Lillies*, *Molies*, *Autumnal Narcissus*, *Scarlet Beans*, *Candy Tufts*, *Veronica*, *Poppies*, *Indian Pinks*, *Passion-Flower*, *Anomum Plini*, *Jessamines*, *Monthly Roses*, *Oranges*, *Myrtles*, &c. In the Olitory, we have *Endive*, *Succory Cabbages*, *Artichokes*, *Pompions*, *Melons*, and some *Cucumbers*. In the Fruit-Garden, *Peaches*, *Figs*, *Grapes*, *Apples*, *Pears*, &c.

O C T O B E R.

In the Parterre and Flower-Garden, plant your *Ranunculus's* in fresh Earth, and *Anemonies* delay'd in the last Month, and as soon as they appear, secure them from the Winds and Frosts, with dry Straw or Mats: Now plant your choice *Tulips*, &c. in natural Earth, impoverish'd with fine Sand; and all Sorts of Bulbous Roots may now safely be interred; plant also your *Vernal Crocus's*, *Iris's*, &c. You may yet sow *Alaternus* and *Phylirea* Seeds; continue sowing what you did in September; you may continue also to remove *Gilliflowers*, *Hollihocks*, &c. and if the Season be mild, you may prune *Rose-Trees*, and other hardy Plants; preserve your *Carnations* from too much Moisture, and trim them with fresh Mould; carry into the Conservatory your *Narcissus*, *Tuberose*, and the *Myrtles*, and other remaining Green-House Plants; cleanse your Walks from autumnal Leaves; finish your last Weeding, &c.

In the Kitchen-Garden sow *Genoa*, *Lettice*, *Raidishes*, &c. plant out your *Cabbage* and *Colewort* Plants; and in the next Month transplant *Cabbages* in Turf; sow all stony and hard Kernel-Seeds, covering

vering them with Fern or Straw, to keep them warm in the Winter ; or you may defer this Work 'till the next Month. Remove Graffs off the second Year, unless it be Dwarfs, which are to stand 'till the third : Towards the latter End of the Month, plant *Apricots, Cherries, Plumbs, Vines, Winter-Pears, &c.* all Sorts of Trees which have lost their Leaves ; lay bare the Roots of Old unthriving, and hasty-blowing Trees ; stir up new planted Ground ; trench Ground to lye for a Winter-mellowing ; carry Dung into your Kitchen-Garden, and spread it.

For Produce, we have now of Flowers, the *Tuberoſe, Hyacinth, Marvel of Peru, Autumnal-Narciffus, Perſicums, Violets, Veronica, Jeſſamines, double Virgins-Bower, Amornums, Saffron Flowers, Cyclamens, Amaranthus's, Stock-Gilliflowers, the Strawberry-Tree, Myrtles, Pomegranets, Monthly-Roſes, Oranges, &c.* In the Kitchen-Garden we have *Endive, Succory, Beet, Chards,* all manner of green Pot-herbs and Roots ; and *Grapes, Plumbs, Apples, Pears, &c.*

N O V E M B E R.

In the Parterre and Flower-Garden, ſow *Auricula's* Seeds ; plant your faireſt *Tulips* in Places well ſhelter'd ; cover your *Peeping Ranunculus's,* tranſplant the ordinary Sorts of *Jeſſamines* ; plant *Roſes, Syringo's, Peonies, &c.* and alſo the fibrou's Roots, ſpecify'd in the preceding Month ; ſow all ſtony Seeds ; plant all Sorts of Trees for Walks and Avenues, and you may tranſplant Fruit-Trees, or remove any other large Vegetables, which you may likewiſe do in the Miſt of Summer, taking up the Trees with Mould about the Roots, and
imme-

immediately plunging them into moist Earth beat to Pap like Mortar, keeping them shaded and fresh 'till Rain comes. House your choicest *Carnations*, or rather set them under a Pent-House against a South-wall for the Benefit of the Air, covering them in Extremity of Weather. About the middle of this Month, or sooner, if the Weather require, quite enclose your tender Plants in your Conservatory, excluding all Entrance of cold and sharp Winds; and if any of the Plants become exceeding dry, and it be not frosty Weather, refresh them sparingly with qualified Water. * If the Season proves extreamly piercing, (which you may certainly know by the freezing of a moistened Cloath, or Dish of Water) light your Fires: When it does not freeze or rain, and the Sun shines clear, shew the Greens the Light thro' the Glass-windows, but enclose them again at Night, unless the Weather be very mild: If any of the Trees grow tainted, make a Fire in your Stove and open the Windows from ten in the Morning 'till three in the Afternoon, then closing the outside Shutters: You are not to water your *Aloes*, or *Sedums*, during the whole Winter, and watering of any housed Plants, particularly *Oranges*, is very pernicious, unless there be an absolute Necessity: If the *Aloes* grow manifestly too dry, expose them to the Air when clear, for a small Space, and they will recover. Prepare Matrasses, Boxes, Cassettes, Pots, &c. for tender Plants, and Seedlings newly sown.

In the Kitchen-Garden, continue your setting and transplanting of Trees, and to lay bare old Roots; and in all Transplantings have a Regard to the former Aspect, and set your Tree not any deeper

* Vide, watering of *Oranges*, &c. in the Month of April.

deeper than it stood before : And 'tis observ'd as a general Rule, that you cannot plant too early in Autumn ; Wind S. W. plant moist, sow moderately dry, and cover not your Seeds too thick ; furnish your Nursery with Stocks to graff on the next Year : Prepare Stocks for all Sorts of Fruit ; apply fresh Mould to the Roots of sickly Trees ; cover your most delicate Stone Fruit and Murals for their Defence against the Easterly and Northerly Winds ; gather your remaining Orchard-Fruit. Carry Compost out of your *Melon* Ground, and mingle it with Earth in Ridges for the Spring ; trench and fit Ground for *Artichokes*, &c. which are to be cover'd as *Asparagus*, and Leaves fallen in the Woods, will supply for Dung : Cut off the Tops and Stalks of *Asparagus*, weed the Beds and cover them with long Dung ; sow *Asparagus* Seeds, and prepare Beds, to plant in Spring. And *M. de la Quintiney* in his *Comp. Gard.* advises the forcing *Asparagus*, by digging the Trenches between the Beds, and filling them up for two or three Foot deep, with hot strong Dung. Take up *Potatoes*, *Carrots*, *Parsnips*, *Cabbages*, *Colliflowers*, &c. and put them in your Cellars, (the Roots in Sand) for spending, and for Seed. Sow and set early *Beans* and *Pease* : The hot Beds will supply for Sallads, young *Lettice*, *Cresses*, *Chervil*. &c. whereon you may sow *Raddishes* for *Christmas* : Plant *Gooseberries*, *Corinths*, and other Shrub-Fruit.

The Products of this Month of Flowers, are, *Stock-Gilliflowers*, *double Violets*, *Meadow Saffron*, *Musk Rose*, &c. *Jessamines*, *Myrtles*, &c. In the Kitchen-Garden, Sallading, &c. and some *Artichokes*, plenty of *Apples* in your Orchards, *Winter Pears*, and some *Medlars*.

D E C E M B E R

Mr. *Woolridge* says, you may yet plant *Anemonie* and *Ranunculus* Roots ; preserve from immoderate Rains and severe Frosts, the choicest of those Flowers, and also *Carnations*, &c. set *Bay-Berries*, &c. Keep the Doors and Windows of your Conservatory well matted, and guarded from the piercing Air : Cover your Fountain-Pipes and Stone of your Water-works, with Stable Litter.

In the Kitchen-Garden, plant *Vines*, &c. and Stocks for Graffing, &c. and either late in this Month, or in *January*, prune and cut off all the *Vine-shoots* to the very Root, save one or two of the largest. Feed your weak Stocks : You may at the latter End of this Month, prune and nail Wall-Fruit and Standards that are hardy, tho' 'tis better deferr'd a Month or two longer ; you may as yet set all Sorts of Kernels, Stones, &c. Sow little Sallads on hot Beds ; sow for early *Beans* and *Pease*, but take Care of the Frosts : Continue to trench Ground, and dung it, to be ready for Borders, or the planting of Fruit-Trees, &c. Cover *Sellery* and other Winter-sallading, with long Dung.

The Produce of this Month of Flowers, is only the *Black Hellebore*, *Winter Cyclamen*, *Primrose*, *Snow-Drops*, and perhaps some *Stock-Gilliflowers*. In the Kitchen-Garden, *Winter Spinage* and *Cabbages*, and *Apples* and *Pears*.

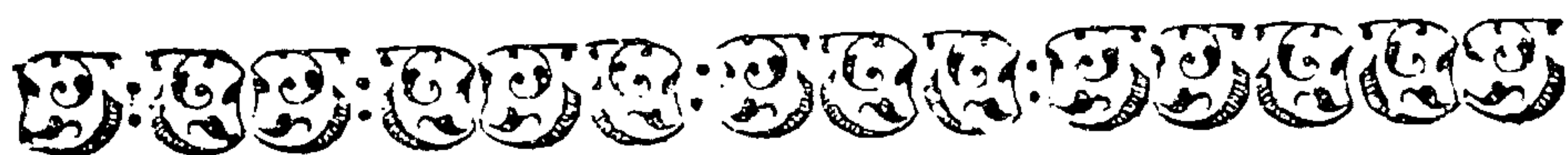


The CONCLUSION.

I Have now gone thro' the particular Branches of Gardening I propos'd, and I hope to the Satisfaction of all contemplative and ingenious Gentlemen, whose Favour only, with that of their fair Spouses I desire, and I hope I may without Pre-
 sumption expect, and to use the Words of Mr. *Laurence*, in the Conclusion of the first Part of this Work;
 ' Thus much at least I have endeavour'd to speak
 ' intelligibly, to lay down my Observations in a
 ' tolerable Method, and to avoid unnecessary Pro-
 'lixity. I shall conclude this Treatise with two
 Epistles I received from Mr. *Laurence*, on communicating my Design to him, whose Concurrence I think no small Recommendation, notwithstanding a late Author hath endeavour'd to expose him. You'll see that Gentleman wrote to me in great Hast: However, I presume to insert his Letters, since the last of them contains something perfectly New, relating to variegated Greens and Plants, &c. and not doubting his Candour and Generosity to forgive this Freedom.

P 2

LETTER



LETTER I.

A Letter from the Reverend Mr. Laurence,
Containing his APPROBATION of this
WORK,

Sir, Yelvertoft, Feb. 19. 1716-17.

YOURS of the 12th Instant, which I receiv'd, happening to lye a Post or two at Northampton, hinder'd me from answering it sooner; But I suppose it will now be too late to tell you, that I am highly pleas'd with your Design, as what I have long wish'd might be undertaken by some able Hand; not by Way of Dictionary, as some lazy Writers of late have done; but in a Concise Method, and an easy pleasant Style, such as may entertain the Reader with Delight and Satisfaction, as well as Information. That was what I own I aim'd at, at least in both my Treatises; and the World was pleas'd to take them kindly. The Specimen you have given me of your Manner of Writing, makes me hope you will answer the World's Expectations in the other Part of Gardening, equally entertaining, and much wanted, relating to Flowers, Green-houses, &c. which, as you say rightly, I did not touch upon. Indeed I on Purpose chose to wave it, that it might be undertaken by some other of longer Experience in those Matters, than my self, and furnish'd with more uncommon Observations than I pretend

tend to be Master of. To this Purpose, before I publish'd my last Book, I would have perswaded Mr. Uvedal of Enfield, or Mr. Lloyd, Rector of Covent-Garden, to undertake that very Thing you now attempt, and to have join'd with me: But neither of those worthy Gentlemen would be perswaded to set Pen to Paper. I dare say, however, the World will not think it now too late to be bless'd and oblig'd with the Effects of that experimental Knowledge you say you have gain'd in those Matters; and I believe I may venture to say, you may depend upon a very fair and impartial Hearing; these Sorts of Subjects being eagerly sought after by all polite and ingenious Gentlemen, not to say those of the Fair Sex too. I am much oblig'd to you for your kind and friendly Letter, and should be glad of the Opportunity of a nearer Acquaintance with you. In the mean Time, I heartily wish you Success in your Undertakings, and shall be glad of all Opportunities to shew that I am,
(tho' unknown)

Your affectionate Friend,

And humble Servant,

J. LAURENCE:

P. S. I can meet with few that understand, or like Mr. Switzer's Way of Writing: He has promis'd to treat upon your Subjects; but except he exceeds the Specimen he hath given us, his Books will hardly be lik'd; at least they will rather please the Poets, than the natural Philosophers.

To Mr. Charles Evelyn.

LETTER



LETTER II.

A Letter from Mr. Laurence, with some Directions for the beautifying and improving a Garden of Pleasure, particularly relating to variegated Greens.

Sir, Yelvertoft, March 6, 1716-17.

I Am much oblig'd to you for the good Opinion you are pleas'd to entertain of my poor Judgment : But indeed, tho' I have made some Observations on Nature in that which I call the profitable Part of Gardening, yet I would not make my self wiser than I am, but freely own that I know nothing remarkable, or worth communicating to a Man of your Ingenuity and Experience, relating either to Flowers or Green-Houses ; those Curiosities having been pretty much neglected by me, chiefly for want of Time, and a good Soil : To say nothing of the Charge of the latter ; if there is any Thing more than other in a Garden of Pleasure, that strikes my Fancy, it is that great Variety of Stripes which Nature affords us in almost all Sorts of Vegetables ; and I have sometimes thought, if a complete Collection of these were made, and they were judiciously sorted, according to the different Times when they appear in their greatest Beauty, a very surprizing and agreeable Show might be made, especially, if a Place were allotted for these Sorts of Beauties,

Beauties, and for these alone. For Instance, If in a little square Place the Walls were cover'd with variegated Philyrea's, Rosemaries, Ivies, &c. some Borders with handsome Standards of painted Hollies, one of every Sort ; others fill'd with painted Laurels, Jessamines, Hony-suckles, &c. and then, if all the painted Reptiles and Shrubs were plac'd by themselves, Periwinkles, Thymes, Violets, &c. and also all the several Sorts of Annuals, with strip'd Leaves, Lillies, Crown-Imperials, &c. I should think a complete Collection of these judiciously sorted, as it would be an uncommon Fancy, so it would please the Curious, who are very naturally led to admire the Beauties and Varieties of Nature. I thought good only to hint thus much, leaving it with you to improve or enlarge, as you see Occasion, or to lay aside if you dislike. I doubt I have not express'd my Thoughts very consistently, being in great hast ; but I trust you will pardon that, as coming from one that is

Your most affectionate

Humble Servant,

To Mr. Charles Evelyn.

J. Laurence.

F I N I S.

NEW
IMPROVEMENTS

OF
Planting *and* Gardening,

BOTH
Philosophical *and* Practical.

EXPLAINING.

The MOTION of the SAP, and Generation of PLANTS:

With other Discoveries never before made Publick, for the Improvement of *Forest-Trees*, *Flower-Gardens*, or *Parterres*; with a new Invention whereby more Designs of *Garden-Platts* may be made in an Hour, than can be found in all the Books now extant. Likewise several rare Secrets for the Improvement of *Fruit-Trees*, *Kitchen-Gardens* and *Green-house Plants*.

Agite, O Adolescentes, & antequam Canicies vobis obrepant. Stirpes jam alueritis, quæ vobis, cum insigni utilitate, delectationem etiam adferent.

Pet. Bellonius, de neglectâ Stirpium culturâ,

By RICHARD BRADLEY, Fellow of
The ROYAL-SOCIETY.

Dublin: Printed for George Grierson, at the two Bibles in
Essex-Street, MDCCXVII.

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To the Most High, Puissant, and Most
Noble PRINCE

H E N R Y,

Duke, Marquis, and Earl of *Kent*, Earl of
Harrow, Viscount *Goodrich*, Baron *Lucas* of
Cradwell, &c. Lord-Steward of His Majesty's
Household, Constable of *Windsor* Castle, and
Lord Warden of *Windsor* Forest, Lord-Lieu-
tenant and *Custos Rotulorum* of the County of
Bedford, one of the Lords of His Majesty's
Most Honourable Privy-Council, and Knight
of the Most Noble Order of the Garter.

My LORD,!

YOUR Grace's Generous Encouragement of
whatever may advance the Good of your
Country, gave me the first Thought of inscrib-
ing these Papers to your great Name; and it is
with Pleasure that I mention your Grace's Per-
mission to make Use of that Patronage, which my
Ambition first led me to. I am too well acquainted
with your great attainments in all Kinds of
Learning, to offer any conjectural Projects, or
vain Hypotheses, to so penetrating a Judgment;
these Sheets are the Result of many Years Expe-
rience,

The Dedication.

rience, the only Foundation which such accurate Philosophers as your Grace will allow for the Improvement of Natural Knowledge. It is a great Happiness, when Men of your exalted Quality, and large Fortunes, honour the Sciences, not only with your Protection, but by being Masters of them, become their Ornaments. Thus, my Lord you are to our Studies in a Way of Art, what the Sun is to the Subject of them in a natural Way, which, tho' plac'd at an infinite Distance from the Plants of the Earth, yet by its Influence gives them Warmth, Action, Life and Beauty.

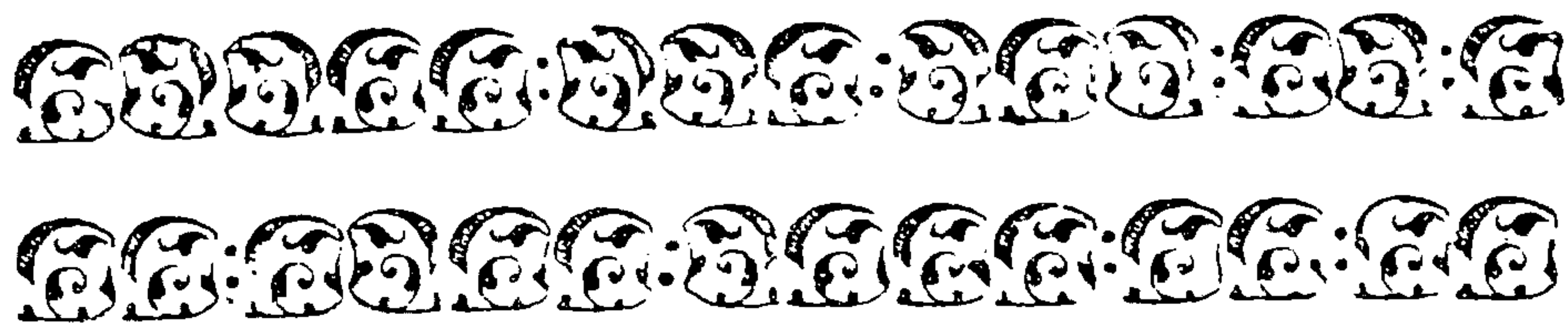
May it please your Grace,

Instead of enumerating the several Virtues of your illustrious House, and your own, which the Publick know already; I beg Leave to Congratulate my Country upon the noble Spirit your Grace, has always shewn in doing it the most important Services. The Men of Business, and the Men of Letters, the State and the Societies of Learning, are equally your Debtors. For my own Part, tho' the meanest among the latter, I shall endeavour, from your Influence, to prosecute the Subject I have here begun, with new Vigour, humbly hoping to approve my self, what I most desire to be thought,

Your Grace's Most Obliged and

Most obedient humble Servant,

Richard Bradley.



THE PREFACE.

AS there is no Subject of more General Use and Advantage than the Cultivation of Land, and the Improvement of the vegetable World, so there is none which has been treated of more largely, and fell under such a variety of Pens of all Kinds. The Publick, which is generally so good natur'd on this Occasion, as to accept and encourage any Thing that looks towards the bettering their Fortunes, has never been so much baulk'd in their Expectations as in Books of Agriculture. The Reasons of which are, that some of these Writers have bestow'd their Pains in collecting from Antiquity and foreign Soils, and thought they had perform'd great Matters, by heaping together a Load of Observations from Varo and Pliny, without carefully considering wherein their Experiments differ from the Genius of our Soils and Climates: Others employ'd their Time in copying from our old English Systems, and these have generally transcrib'd one another, without the least Acknowledgement of their Thefts, or adding one single Improvement to the Knowledge of their Fore-fathers. And indeed, how should it happen otherwise, when the Undertakers of this Subject have generally been either Covetous or illiterate

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P R E F A C E.

rate Gardeners and Planters ; some that if they knew any thing new or curious, had not the Spirit to communicate their Notions ; and some that jogg'd on in the old beaten Track, without any Ambition to excel their Predecessors. We have now and then, it is true, a Gentleman studious and capable of obliging the World, free from the narrow Views of Self-Interest, and employing his Hours for a more diffusive Benefit than the Culture of his own private Estate or Garden ; an Evelyn, a Nourse and a Laurence have given us something equally New and Just, built upon Experiment, upon the beneficial Subject of Plantation. But what are these when compar'd to that useless Number of unimproving Authors.

Apparent rari nantes in gurgite vasto.

For my own Part, I must confess, That I have been a long Time waiting for a Complete System of Agriculture, and have read many a fair promising Title, but have found nothing within but a barron Bulk of Old Repetitions. This has excited me, who from a natural Bent of Genius, even from my Childhood, have had a Passion for Gardening and Planting, to reduce all my Notions and Observations into a regular Form, and endeavour to supply this General, and so much lamented Defect of other Writers, I shall think without Vanity, that I may do my Country no inconsiderable Service, if I can excite the Nobility and Gentry of the Kingdom to early Plantations upon their Estates, which I shall prove, will not only redound to their own private Profit, but the Advantage of the Nation in general. The Disuse of this Method was complain'd of by Mr. Evelyn, who says very justly, There is no Part in Husbandry which Men commonly
more

P R E F A C E.

more fail in, neglect, and have Cause to repent of, than that they did not begin ;Planting betimes. And indeed such Persons who have been deaf to Demonstration at the first Possession of their Estates, and are afterwards convinc'd of the vast Advantages to be reaped by an early Plantation, either from the Experience of their Neighbours or themselves, must have a very pungent Retrospect upon this Occasion. Every Man is naturally willing to enjoy the Profits of the Works (as one may call them) of his own Hands, and he therefore who begins at Fifty to be sensible that he has lost many a fair Thousand by his Neglect of improving his Estate between Twenty and his present Age, is to himself indeed a Loser, but a Warning to others to avoid that Folly.

To begin then as Methodically as I can, and take in all that relates to this Subject, I shall fairly tell my Reader what he is to expect in this First Part, and I hope he will pardon me if I mix a little Natural Philosophy, such as is plain, easy, and grounded upon my own Experience, with these Observations on Gardening and Planting.

I shall then advance (what I think) a new System of Vegetation, and endeavour to prove that the Sap of Plants and Trees Circulate much after the same manner as the Fluids do in Animal Bodies, which may be one Argument to shew the beautiful Simplicity of Nature in all her Works.

The Generation of Plants will next be consider'd, and the Manner how their Seeds are impregnated, a Discovery which I made some Years since; this will be of great Use to all Planters, by directing them in the proper Choice of their Seeds.

The Difference of Soils will make another considerable Article, what are Natural to each Tree, and how
all

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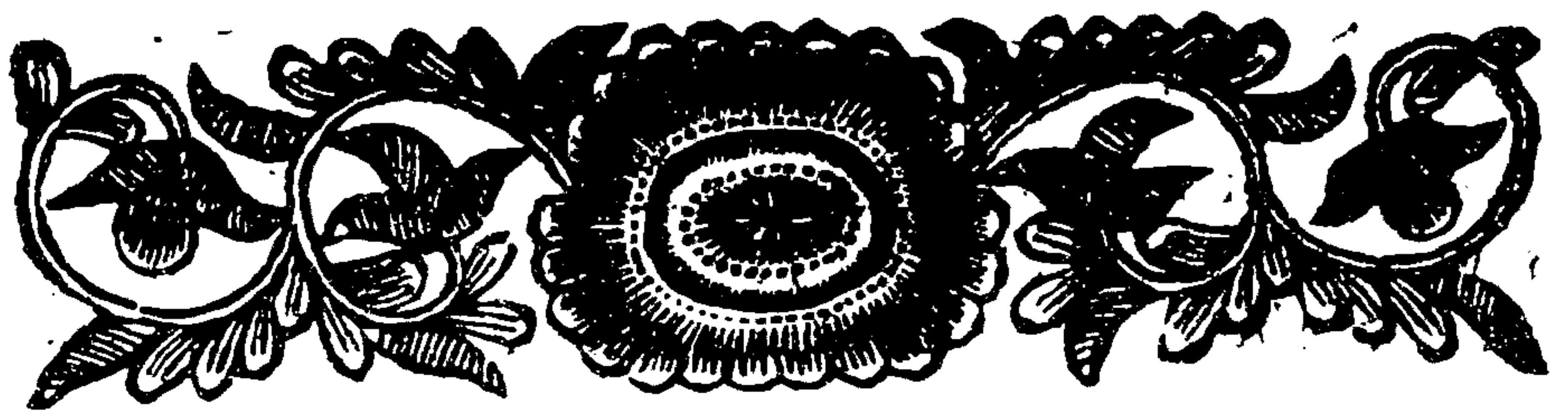
all Kinds of Soils may be mended, alter'd or improv'd by proper Mixtures with each other ; a part of Husbandry that has as yet been but slightly touch'd upon, and yet the whole depends chiefly upon it.

The Method of dressing of Woods, and making Plantations of Timber Trees, naturally follows ; wherein I shall propose a new, easy and Practical Way of raising Woods, with very little Expence, which I hope will take off those Fears which the Generality are taught to conceive of the present great Charge of New Plantations.

And for the further Encouragement of all Gentlemen, who propose an Advantage from their Woods, I shall add an Estimate of the Profits that will arrive from an Acre of Land planted with Timber and Underwood in 9 Years, 17 Years, and 25 Years after Planting, which I shall prove will amount to above 250 l. beside the Timber growing.

Having now laid my Scheme before the Publick, I have nothing more to do, than invite all Gentlemen, who are Curious in this Way, to communicate their Observations upon any of these Heads, and whether they agree with, or contradict my own, I shall think my self oblig'd to do them Justice in my following Papers, I can only say, That this is a Subject which I have long study'd and experienc'd ; and a slight or single Observation ought to be no Foundation to build a new System upon, or overthrow an old one. An Undertaking of this Kind, which aims directly at the Good of others, I hope therefore will meet with little Censure, and less Discouragement.

T H E



N E W

IMPROVEMENTS

O F

Planting and Gardening,

B O T H

Philosophical and Practical.

C H A P. I.

*A Parallel between Plants and Animals ; with
an Attempt to prove the Circulation of the
Sap in Vegetables.*

V egetation, in whatever Degree I shall treat of it, is equally depending on the Order of Nature. Whether I speak of *Trees, Shrubs, or Herbaceous Plants*, their Principles are equally the same : that is to say, they all alike draw their Nourishment by way of their *Roots* ; which Nourishment is convey'd through proper Vessels into the *Stem, the Branches, Leaves, Flowers and Fruit.*

Now that I may more easily explain by what Means every *Plant* receives and distributes it Nourishment

richment to the several Parts of it; give me leave to draw a Parallel between *Plants* and *Animals*, that thereby the Nature of *Plants* may be the better understood.

The many curious Observations which have been made concerning the Structure of *Animal Bodies*, and what *Malpigi*us, Dr. *Grew*, and my self have remark'd in the Structure of *Vegetables*, may ascertain to us, that Life, whether it be *Vegetable* or *Animal*, must be maintain'd by a due Circulation and Distribution of Juices in the Bodies they are to support; we have all alike discover'd (with the help of *Microscopes*) the several Vessels, and other Parts which compose a *Plant*; but I cannot agree in Opinion with the Authors I have mention'd concerning the Course of the Juices thro' the Ducts and Channels which we have discover'd. It would be needless for me in this Place to relate their several Opinions, which would swell this Treatise to too great a Bulk; their Works may be perused by the Curious; I shall proceed to explain, that the *Sap* Circulates in the Vessels of *Plants*, as the *Blood* doth in the Bodies of *Animals*.

And that this new System may be the better understood, I think it proper in this Place to give a short Description of the Vessels in *Plants*, and their Situation. First then the *Roots* of a *Plant* is of a spongy Nature, ready to admit into it such humid Particles as are fitted (in the Earth, by a certain Temperature of Air) to be received into its Pores: and we may observe that the various Qualities of different *Plants* depend chiefly on the different Size of the Pores in their *Roots*, by which they receive their several Nourishments.

Secondly, We must understand that the Wood of every *Plant* is composed of Capillary Tubes running

ning parallel with each other, from the *Root* (up-right) through the *Trunk*. Their Cavities are so small that they are hardly to be discern'd by the natural Eye, unless in a Piece of Charcoal, Cane, or Oaken Board : These Vessels renew and augment themselves every Year, as we may observe by cutting a *Tree* Horizontally, which will discover to us the Latitudinal Shootings, and the annual Additions of these Pipes, and for which Reason the *Trunks* of *Trees* increase in their Circumference. These Tubes for Distinction sake I shall call *Arterial Vessels*. For it is through these the *Sap* rises from the *Root* in fine *Vapour*; for their Cavities are so small that it would be impossible they should admit any thing whose Parts were so large as those of a *Liquor*.

Thirdly, The Passages, or Pipes, by which the *Sap* returns downward, are much more open than the former, and are capable of receiving a *Liquor* into them; these are placed immediately on the Outside of the *Arterial Vessels* between the *Wood* and inner *Bark*, and lead down directly to the Covering of the *Root*. They perform the Office of *Veins*; and contain the liquid *Sap* which is found in *Plants* in the Spring and Summer Months.

Fourthly, The *Bark* of a *Tree* is of a spongy Texture, and by many little Strings which pass between the *Arterial Pipes*, corresponds with the *Pith*. And,

Fifthly, The *Pith* is composed of little transparent Globes chain'd together in like Manner with those Bubbles which compose the Froth of any *Liquor*.

In fine, a *Plant* is like an *Alimbeck*, which distils the Juices of the Earth; as for Example.

The *Root* having suck'd in the Salts of, and thereby fill'd it self with proper Juices for the Nourishment of the *Tree*; these Juices then are set in Motion

tion by Heat, that is, they are made to evaporate into *Steam*, as the Matter in a Still will do when it begins to warm; now so soon as this *Steam* or *Vapour* rises from the *Root*, its own natural Quality carries it upwards to meet the Air; it enters then the Mouths of the several *Arterial Vessels* of the *Tree*, and passeth up them to the Top with a Force answerable to the Heat that put it in Motion, by this Means it opens (by little and little as it can force its way) the Minute Vessels which are roll'd up in the *Buds*, and explain them by degrees into *Leaves*.

But as every *Vapour* of this kind when it feels the Cold will condense and thicken into a Water, so when the *Vapour* which I mention to rise thro' the *Arterial Vessels* arrives at the extream Parts of them, (*i. e.*) the *Buds* of a *Tree*, it there meets with Cold enough to condense it into a *Liquor*, as the *Vapour* in a Still is known to do.

In this Form it returns by Means of its own Weight to the *Root* down the *Vessels* which do the Office of *Veins*, lying between the *Wood* and inner *Bark*; leaving, as it passeth by, such Parts of its Juice as the Texture of the *Bark* will receive, and requires for its Support.

It may be wonder'd at that I have not taken more Notice of the *Pith* which has been always accounted the principal Part of a *Tree*; to which I shall only answer at this Time, that many *Herbaceous Plants* have not any *Pith*, and that I have seen the *Trunks* of large *Trees* destitute of it, and they have yet continued to grow and to bear *Fruit*, so that the Order of *Vegetation* may be explain'd without it; and indeed was I here to take Notice of the several Particulars in *Plants*, I might swell this Treatise into a large Volume; but I am clearly of
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the same Opinion with him that said, μέγα βίβλον, μέγα χάρον; and therefore shall confine my self in this Work to such Relations only, as I hope may be Useful.

But to proceed: The following Experiment of the most Ingenious Mr. *Lawrence*, which he has mention'd in his *Clergyman's Recreation*, relating to the *Jessamine*, may convince us of the Certainty of the *Sap's* Circulation in *Plants*. I shall give it in his own Words, “ Suppose a plain *Jessamine* “ *Tree* spreading it self into two or three *Branches* “ from one common *Stem* near the *Root*. Into any “ one of these *Branches*, in *August*, inoculate a “ *Bud* taken from a yellow strip'd *Jessamine*, where “ it is to abide all *Winter*, and in the *Summer*, “ when the *Tree* begins to make its *Shoots*, you “ will find here and there some *Leaves* ting'd with “ *Yellow*, even on the other *Branches* not inocu- “ lated, 'till by *Degrees*, in succeeding *Years*, the “ whole *Tree*, even the very *Wood* of all the ten- “ der *Branches*, will be most beautifully strip'd “ and dy'd with *Yellow* and *Green* intermix'd; he “ adds, that tho' the inoculated *Bud* should not “ shoot out, or that it should live but two or three “ *Months*, and after that happen to die or be “ wounded by *Accident*, yet even in that little “ *Time* it will have communicated its *Virtue* to “ the whole *Sap*, and the *Tree* will become entirely “ strip'd. ” And this Experiment my self and several others have made several *Years* ago; it gave me the first Hint of the *Sap's* Motion, and put me upon further Enquiry, it may I hope satisfy the Curious.

The Motion of the *Sap* continues in a *Plant* so long as the *Sun's* Warmth can keep it in a fluid State, but is condensed or thicken'd by a *Winter's* Cold,

Cold, and is thereby changed into the Consistency of Gum, and being thus stagnated, cannot move any more till the Warmth of the following Spring, or some artificial Heat, rarifies it into its former liquid State.

It then renews its former Vigour, and pushes forth *Branches, Leaves, &c.* But we must not suppose it is only the melted Sap that does that Office of *Germination*, the *Root* has not been idle while the *Branches* have stood still, it has not lost the Moisture of the preceding Autumn to impregnate and furnish it self with proper Salts or Nouriture; from whence the *Tree* is to be maintain'd. Here is a Supply laid in to furnish Food for the Summer; as some industrious *Animals* will do to nourish themselves in the Winter.

In the next Place it may not be amiss to confute a common Opinion, *That the Sap returns to the Root in Winter*; for if it did so, how comes it that *Trees* which are cut down in *November* and *December* will put forth *Branches* and *Leaves* the following Spring, altho' they have no *Root* or *Earth* to feed them; this plainly shews that the Sap is condensed or thicken'd in the *Tree* during its Circulative Course by extream Cold, and remains in that gummy State, 'till the Warmth of the Spring (as I have already said) liquifies it, and by the *Vapour* which must then arise from it, the *Buds* are push'd forth, so long as there is Matter sufficient to furnish them.

And now since it appears from what has been said, that *Plants* have a Circulation of Sap, and proper Means whereby to supply themselves with Food, let us consider whether *Plants* in their several Kinds do not require different Sorts of Food one from the other, like various sorts of *Animals* which differ in their *Dyets*.

First

First then, *Land Animals* may be liken'd in general to those *Plants* which are call'd *Terrene*, for that they live only upon the Earth, such as *Oaks*, *Beech*, *Elm*, &c.

Amphibious Animals, such as the *Otter*, *Beaver*, *Tortoise*, *Froggs*, &c. which live as well on the Land as in the Waters, may be compared to the *Willow*, *Alder*, *Minths*, and such others.

The *Fish Kind*, or *Aquatick Race*, whether of the *Rivers* or the *Sea*, are analogous to the *Water Plants* such as *Water Lillies*, *Water Plantains*, &c. which only live in *Rivers* or *Fresh Water*, or the *Fuci*, *Coral*, *Coraline*, &c. which are *Sea* or *Salt Water Plants*; and not any one of those will live out of its proper Element. From whence we may conclude, how improper it would be to plant a *Water Lilly* in a dry sandy Desert, or an *Oak* at the bottom of the *Sea*, which would be just as unreasonable as if we should propose to feed a *Dog* with *Hay*, or a *Horse* with *Fish*; however, this Rule of Nature has been so little observ'd even by some of our greatest *Planters*, that we can hardly boast of good Success in one out of five *Plantations* that has been made.

But I shall beg Leave to remark yet further, That as the several *Land Animals* have their respective *Dyets*, so have the *Terrene Plants* likewise their several *Soils* from whence they draw their Nourishment; as some *Animals* feed on *Flesh*, others on *Fish*, *Roots*, *Leaves*, *Grain* or *Fruits*, so do we find that some *Plants* love *Clay*, others a *Loam*, *Sand*, or *Gravel*, &c. Nor is this all we ought to observe, we must consider likewise how beneficial to every *Plant* is a right Exposure, whether in a *Vale*, the sides or tops of *Hills*, exposed to the *South* or *North* Winds, whether inland, or near
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the Air of the Sea ; for it is a proper *Air* that keeps a *Plant* in Health, and fits it to receive its Nourishment, and a certain degree of *Warmth*, peculiar to each kind of *Plant*, it is likewise worth our Enquiry, for it is a *Warmth*, natural to each *Plant* that puts its *Juices* in their proper Motion ; but this may be more fully explain'd in another Place ; in the mean while I shall proceed to examine, in the next Chapter, by what Means *Plants* are capable of *Generating*, and to explain the Uses of that Discovery,



CH A P. II.

Of the Generation of P L A N T S.

IN the foregoing Chapter I have given my Reader such Hints as may serve to explain my *System of the Circulation of Juices in Vegetables*, and have endeavour'd to show that *Plants* are somewhat analogous to *Animals* ; I shall now proceed to offer another discovery, as new as the former, and depending on it, which I conceive will be of extraordinary Use to such as raise Plantations from *Nuts*, *Mast*, or any other kind of *Seed* or *Grain*. And altho' in this Treatise I have proposed to give some Directions tending only to the Improvement of *Forrest* and *Timber Trees*, yet I hope to be excus'd, if in the Explanation of this wonderful Mystery of the *Generations of Plants*, I shall be forced to introduce such kinds of *Plants*, as are not to be found in *Forrests*, and to make some of my Experiments in the *Orchard* or *Kitchen-Garden*.

Moses

Moses tells us in his Account of the Creation, That *Plants* have their *Seeds* in themselves; that is every *Plant* contains in it self Male and Female Powers; the Text he has given us seems to be explain'd by this Discovery, and may lead us to consider that *Plants* wanting local Motion, require therefore this Union of Sexes in themselves, by which Means they may generate without the Neighbourhood of other *Plants*; they are in this respect like *Muscles*, of other immovable Shell-fish, who are *Hermaphrodites* of this kind, having their Propagation without the help of one of the same Species. I mention *Muscles* and other immovable Kinds of *Shell-fish* as a particular kind of *Hermaphrodites*, for those which have local Motion, such as *Snails* and *Earth-Worms*, when they couple with one another, at once perform the Male and Female Act of Generation.

But before I proceed to explain this New System, I think my self obliged to declare that the first Hint of this Secret was communicated to me several Years ago by a worthy Member of the Royal Society, *Robert Balle*, Esq; who has had this Notion for above Thirty Years, that *Plants* had a Mode of Generating somewhat analogous to that of *Animals*. The Light which I received from this Gentleman was afterward farther explain'd by another Learned Member of that Society, Mr. *Samuel Moreland*, who in *Phil. Trans.* Numb. 287, Anno 1703, has given us to understand how the Dust of the *Apices* in *Flowers* (i. e. the Male *Sperm*) is convey'd into the *Uterus* or *Vasculum Seminale* of a *Plant*, by which Means the *Seeds* therein contain'd are impregnated. I then made it my Business to search after this Truth, and have had good Fortune enough to bring it to Demonstration by several Experiments; since which, a Gentlemen of *Paris*

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has printed something of the same Nature, in the *Hist. de l'Accad. de Sciences*, for the Years 1711 and 1712, which were publish'd about two Years ago.

But to come to the Point, the *Lilly* being a Flower more generally known than any other, and its Generative Parts being large and expos'd, I shall from thence endeavour to explain the Method which Nature makes use of to impregnate the Seeds of that and every other Plant, and by which Means the several Species of Vegetables have been continued to the World.

The Flower of the *Lilly* has six Leaves or Petals, which are set on upon the Summit of the Footstalk, mark'd *A* in the first Figure, they serve to guard the Parts of Generation from the Injuries of the Weather, and as they are of no other Use that I know of, so it is not necessary that I should place them in the Figure.

B is the Mouth of the *Pistillum* or Passage which leads into the *Uterus C*, in which are three Ovaries fill'd with little Eggs or Rudiments of Seeds, such as we find in the *Ovaria* of Animals, but these Eggs will decay and come to nothing, unless they are impregnated by the *Farina Fecundans* or Male Seed of the same Plant, or one of the same sort.

From *D* to *E* is a *Stamen* of the *Lilly*, thro' which the Male Seed of the Plant is convey'd to be perfected in the Apex *E*, where, by the Sun's Heat it ripens and bursts forth in very minute Particles like Dust; some Particles of which Powder falling upon the Orifice *A*, is either convey'd from thence into the *Utricle C*, or by its magnetick Virtue draws the Nourishment with great Force from the other Parts of the Plant into the Embrio's of the Fruit, and make them swell.

Now

Now that the *Farina Fecundans* or *Male Dust* has a Magnetick Virtue, is evident, for it is that only which *Bees* gather and lodge in the Cavities of their hind Legs to make their *Wax* with; and it is well known, that *Wax*, when it is warm, will attract to it any light Body. But again, if the Particles of this *Powder* should be requir'd by Nature to pass into the *Ovarys* of the *Plant*, and even into the several *Eggs* or *Seeds* there contained, we may easily perceive, if we split the *Pistillum* of a *Flower*, that Nature has provided a sufficient Passage for it into the *Uterus*.

In the first Figure I have only given a Design of one *Stamen* with its *Apex*, to prevent Mistakes in my Explanation, but the *Flower* of every *Lilly* has six of the same Figure and Use, which are placed round about the *Pistillum* or Female Parts; so that 'tis almost impossible it should escape from receiving some of the *Male Dust* (or *Farina Fecundans*) falling upon it.

In this and other *Flowers* of the like Nature the *Pistillum* is always so placed that the *Apices* which surround it are either equal in Height with it, or above it, so that their *Dust* falls naturally upon it. And when we observe it to be longer than the *Apices*, we may then conjecture that the *Fruit* has began to form it self, and has no longer occasion of the *Male Dust*. And it is likewise observable that so soon as this Work of *Generation* is perform'd, the *Male Parts*, together with the *Leaves* or *Covering* fall off, and the *Pipe* leading to the *Uterus* begins to shrink.

We may further remark, That the top of the *Pistillum* in every *Flower* is either cover'd with a sort of Velvet Tunic, or emits a gummy Liquor the better to catch the *Dust* of the *Apices*.

And now as we may find in the Description I have given of the *Lilly*, that the *Uterus* is within the

the *Flower*; so on the other Hand the *Uterus* of a *Rose* is without the *Flower* at the bottom of the *Petals* or *Flower-Leaves*. And likewise in *Fruit Trees*, the *Cherry's*, *Plums*, and some others, have their *Utricles* within their *Flowers*, and the *Gooseberry*, *Currant*, *Apples* and *Pears*, on the outside or bottom of their *Flowers*. But farther, altho' Nature has design'd the *Dust* of the *Apices* to fecundate the *Female Parts* contain'd in the *Flowers* of *Plants*; yet we observe that in some *Plants* the *Male* and *Female Parts* are remote from each other; as for Example, the *Gourd*, *Pumpkin*, *Melon*, *Cucumber*, and all of that Race, have *Blossoms* distinctly, *Male* and *Female*, upon the same *Plant*. The *Male Blossoms* may be distinguished from the others, in that they have not any *Pistil* or Rudiment of *Fruit* about them, but have only a large *Thrum* cover'd with *Dust* in their middle; the *Female Blossom* of these has a *Pistillum* within the *Petals*, or *Flower Leaves*, and the Rudiment of their *Fruit* always apparent at the bottom of the *Flower* before it opens; and so in like manner all *Nut-bearing*, and, I think, *Mast-bearing Trees* have their *Catkins* or *Male Blossoms* remote from the *Female Parts*.

The *Oak* for Example, which blossoms in *May*, has its *Male Parts* distinct from the *Acorns*, we find Strings of little *farinaceous Flowers* in great Abundance, as in the Second Figure, mark'd *G*, remote from the Rudiments of the *Acorns* or *Fruit* mark'd *H*: And so likewise in the *Walnut*, *Chestnut*, *Hazel*, *Pine*, *Cypress*, and even the *Mulberry*, *Aspen*, and others. I have observ'd that some Sorts of *Willows* change their Sex every Year, by producing only *Male Blossoms* or *Katkins* one Year, and the other following Strings of *Female Blossoms*, which if they then happen to be near enough some
Flaw'ring

Flow'ring Male, will produce *Seeds* not much unlike those of an *Apocinum*.

When we view with a good *Microscope* the *Male Dust* of one single *Plant*, we find every *Particle* of it to be of the same *Size* and *Figure*, but in some *Cases*, it is of two *Colours*, as in the *Tulip*, where it is *Yellow* and *Blue*; but as *Plants* differ from one another in their *Figures* and *Qualities*, so are the *Figures* of their several *Dusts* greatly different from each other; a *Grain* of the *Dust* of *Geranium Sanguineum*, *Maximo flore* of *C, B, P*, is like a *Bead* of a *Neck-lace* with a *Hole thro'* it.

The *Farina* of the *Corona Solis perennis Flore & Semine Maximus*, *Hort, Ludg, Bat*, is a *Globe* set with *Thorns*; that of the *Ricinus Vulgaris*, *C, B, P*, is of the *Figure* of a *Grain* of *Wheat*.

And the *Acer Montanum Candidum* of *C, B, P*, affords a *Dust* of the *Figure* of a *Crofs*; and in like manner does the *Farina* of every *Plant* differ in its *Shape* from the rest.

The *Female Parts* of *Generation* in *Plants* are best seen in large *Fruits*, without the trouble of the *Microscope*, such as the *Fruit* of the *Pumpkin* or *Melon*, where with the *Natural Eye* we may discover the *Vessels* distinctly which make the *Tunick* or *Covering* of each *Ovary*; we may see how the *Seeds* are joyn'd to it, and by what *End* they receive their *Nourishment*. And again, between the several *Ovarys* enclos'd in that *Fruit*, we may very easily perceive the *Vagina* or *Passage* through which the *Farina Fecundans* has pass'd to impregnate the *Seeds*.

It may perhaps be objected against this *Hypothesis*, that there are many *Flowers* which hang downwards, as the *Crown Imperial*, the *Cyclamen*, &c. and that their *Pistils* cannot receive the *Farina Fecundans*

Fecundans upon them ; but if we observe that the *Pistils* of these *Flowers* are always more prominent or somewhat longer than the *dusty Apices* which surround them, we may easily conceive that the glutinous Matter and Velvet Covering on the *Extremities* of the *Pistils*, may be capable enough of receiving and holding some of the *Powder* as it falls ; and whether the Intromission of the *Farina Fecundans* be requisite or not, its Lodgment on the Mouth of the *Pistillum* may, by Virtue of its attractive Quality, perhaps fecundate the *Seeds* contain'd in the *Uterus* ; I am sure in the Production of *Animals* there are yet greater Difficulties to encounter with, and it may be if the *Analogy* between *Plants* and *Animals* was more enquir'd after by the Learned, they might discover many new Things which would be serviceable to the Preservation and Benefit of *Animal Bodies*, as this Knowledge will be to the Improvement of the *Vegetable World*. We find, for Example, that *Trees* are generally longer lived than *Animals*, some of them living to four or five Hundred Years ; nay, we have some Accounts by Tradition, of *Trees* that have liv'd above 2000 Years ; the Reason I think is plain, for that, *First*, *Trees* have no Sensation (for it is my Opinion, that the *Senses* prey abundantly upon the *Juyces* of the *Body* they belong to). *Secondly*, They always breathe the same Air : And, *Thirdly*, They feed always upon the same simple *Dyet*. And Mankind, who in the first Times is said to have lived upwards of 900 Years, is said to have fed upon a *Simple Dyet*, and to have drank of the *clear Stream* ; at least he had then but little Variety of Food. But I hope my Reader will pardon this Digression of mine, it may perhaps put him upon greater Discoveries.

I shall now proceed to what I call the *Demonstrative Part* of this *System*. I made my first Experiment

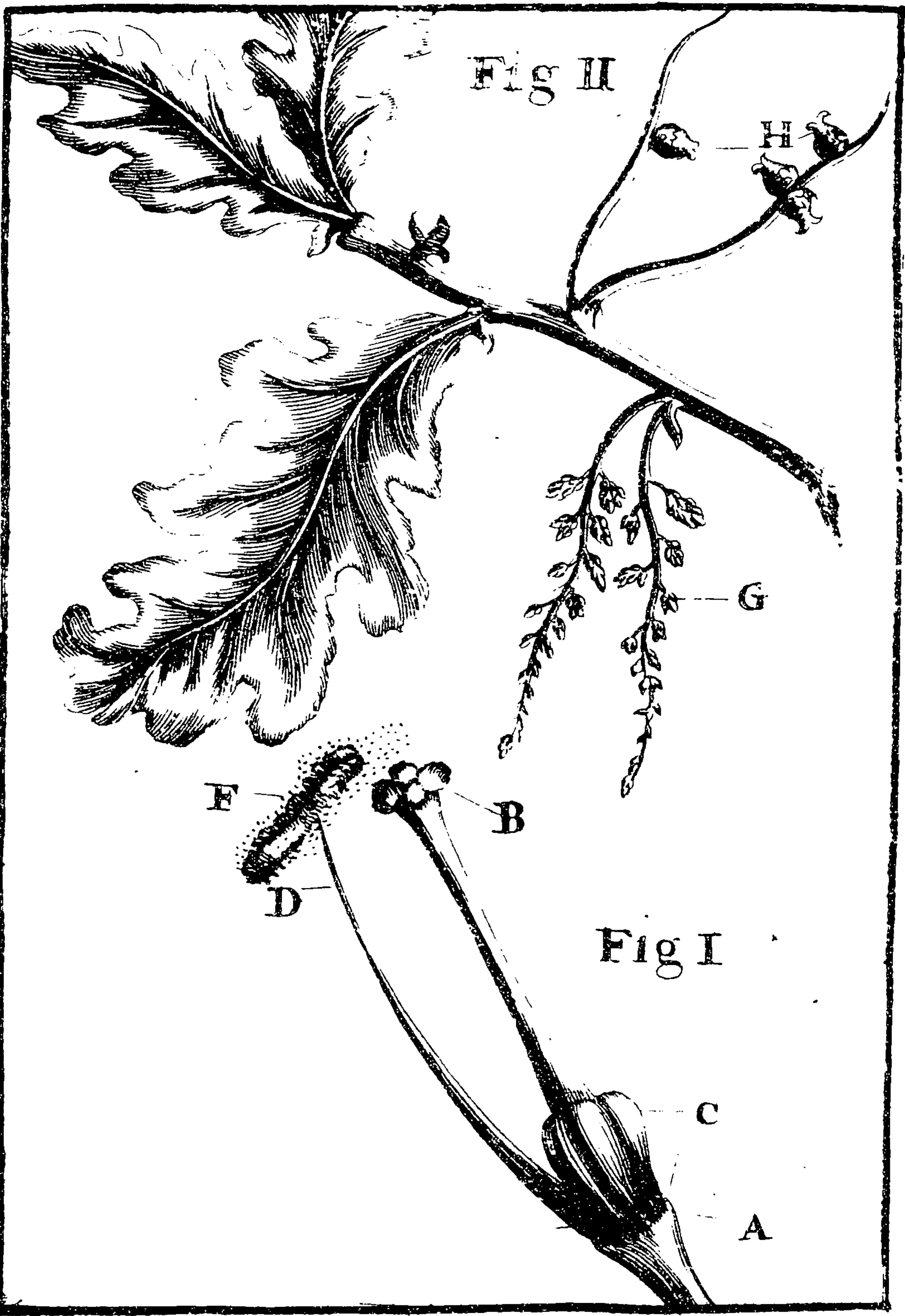


Fig II

Fig I

ment upon the *Tulip*, which I chose rather than any other *Plant*, because it seldom misses to produce *Seed*. Several Years ago I had the Conveniency of a large Garden, wherein there was a considerable Bed of *Tulips* in one Part, containing about 400 Roots; in another Part of it, very remote from the former, were Twelve *Tulips* in perfect Health, at the first opening of the Twelve, which I was very careful to observe, I cautiously took out of them all their *Apices*, before the *Farina Fecundans* was ripe, or any ways appear'd; these *Tulips* being thus *castrated*. bare no *Seed* that Summer, while on the other hand, every one of the 400 *Plants* which I had let alone produced *Seed*.

But as a farther Demonstration that *Plants* generate after the manner I have endeavoured to account for it, I shall recommend to my Reader the following Experiment. Make Choice of such a *Plant* of the *Hazel* or *Philbud*, as you find to be in a bearing State, and far distant from any other of the same Sort; this *Tree* in *January* puts forth what are commonly call'd *Catkins*, which are long *Thrums*, compos'd of very small *Flowers*, that towards the beginning of *March* are cover'd with a fine *Dust*, or *Male Seed*; 'tis then the *Blossoms* or *Female Parts* appear on the *Buds* of the same *Tree*; they are very small, and hardly to be discern'd without strict Enquiry, only offering to the View a small cluster of *Scarlet Threads*, which are so many *Tubes* leading to the Rudiments of the *Nutts*; this happens at a windy Season of the Year, that the *Male Dust* may be more easily convey'd to the *Utricles* or *Female Blossoms* of the *Plant*. Now so soon as the *Catkins* appear, they must be carefully taken from the *Tree*, and it will produce no *Fruit* that Year, unless you have a mind to single out any particular *Blossom* of it, which may be impregnated with *Catkins* from
 another

another *Tree*, gather'd fresh every Morning for three or four Days successively, and dusted lightly over it, without bruising its tender *Fibers*: And in like manner may the *Blossoms* of any other *Tree* or *Flower* be *castrated*, and will have the same Effect.

By this Knowledge we may alter the Property and Taste of any *Fruit* by impregnating the one with the *Farina* of an other of the same Class; as for Example, a *Codlin* with a *Pairmain*, which will occasion the *Codlin* so impregnated to last a longer Time than usual, and be of a sharper Taste; or if the *Winter Fruits* should be fecundated with the *Dust* of the *Summer Kinds*, they will decay before their usual Time; and it is from this accidental coupling of the *Farina* of one with the other, that in an *Orchard* where there is Variety of *Apples*, even the *Fruit* gather'd from the same *Tree* differ in their Flavour and Times of ripening, and moreover the *Seeds* of those *Apples* so generated, being changed by that Means from their Natural Qualities, will produce different Kinds of *Fruit* if they are sown.

'Tis from this accidental Coupling that proceeds the Numberless Varieties of *Fruits* and *Flowers* which are rais'd every Day from *Seed*. The yellow and black *Auricula's*, which were the first we had in *England*, coupling with one another, produced *Seed* which gave us other Varieties, which again mixing their Qualities in like manner, has afforded us by little and little, the Numberless Variations which we see at this Day in every curious *Flower-Garden*; for I have saved the *Seeds* of near a hundred plain *Auricula's*, whose *Flowers* were of one Colour, and stood remote from others, and that *Seed* I remember to have produced no Variety; but on the other hand, where I have saved the *Seed* of such plain *Auricula's* as have stood together, and were differing in their Colours, that *Seed* has furnish'd m.

with great Varieties, different from the *Mother Plants*. I believe I need not explain how the *Male Dust* of *Plants* may be convey'd by the Air from one to another, by which this *Generation* and *Production* of new *Plants* is brought about; but I shall hint by the bye, to such as plant *Orchards* for *Cyder*, that they ought to plant only one Sort of *Apple* in those *Orchards*; and that such *Plantations* be likewise remote from other Kinds of *Apples*, whose *Farina* would else certainly spoil the *Cyder-Fruit* by ripening some sooner and others later, which would occasion almost a continual Ferment in the Liquor; and never permit it to settle or grow fine.

Moreover, a Curious Person may, by this Knowledge, produce such rare Kinds of *Plants*, as have not yet been heard of, by making choice of two *Plants* for his Purpose, as are near alike in their Parts, but chiefly in their *Flowers* or *Seed-Vessels*; for Example, the *Carnation* and *Sweet William* are in some respects alike, the *Farina* of the one will impregnate the other, and the *Seed* so enliven'd will produce a *Plant* differing from either, as may now be seen in the Garden of Mr. Thomas Fairchild of Hoxton, a *Plant* neither *Sweet William*, nor *Carnation*, but resembling both equally, which was raised from the *Seed* of a *Carnation* that had been impregnated by the *Farina* of the *Sweet William*. These Couplings are not unlike that of the *Mare* with the *Ass*, which produces the *Mule*, and in regard to *Generation*, are also the same with *Mules*, not being able to multiply their *Species*, no more than other Monsters generated in the same manner.

We may learn from hence, that the *Fruit* of any *Tree* may be adulterated as well by the *Farina* of one of the same Sort, which perhaps may be sickly and of a Dwarf Kind, as by the *Dust* of some other Kind near a-kin to it, and worse than it self. Now as such

Couplings may be very frequent in common *Woods*, so would I recommend the Choice of *Seed*, to be made only from such *Plants*, or *Timber-Trees* as excel in Greatness or other good Qualities, and are far distant from others of meaner Sorts which might degenerate their *Seeds*, and cross our Expectations when they come to grow up, and this is as necessary to be observed among *Vegetables*, to maintain their good Qualities in the young *Plants* they are to produce, as it is in the Breeding of *Game-Cocks*, *Spaniels*, or *Running-Horses*.

There is but one Sort of *Plant* that I know of, which seems to be out of this Danger of coupling with other Sorts, and consequently of either improving or diminishing the Qualities of its *Seeds*, and that is the *Mistletoe*; the Parts of its Flowers are indeed as apt to *Generation* as those of other *Plants*, but I have never seen any Variety of this *Plant*, or do I know any other nearly enough related to it to *ingender* with it; for whether we find it growing upon the *Oak*, *Willow*, *Lime*, or any other *Tree* what-ever, the *Leaves*, *Flowers*, and *Fruit*, with its manner of *Growth*, are all alike. And since I have had Occasion to mention it in this Place, give me Leave to take Notice of some Particularities belonging to it, as that it is neither to be propagated in *Earth* or *Water*, but upon *Trees* and *Plants* only. The Ancients made it a *Superplant*, peculiar to the *Oak*, and tell us, that altho' it seemingly produced *Seed*, they did not believe that that *Seed* could possibly be made to *vegetate*, because I suppose they had try'd it in the *Earth* without Success. But as it is so frequently found growing on other *Trees*, besides the *Oak* in our Times, I shall take Occasion at once to overturn their Opinion in relation to this *Plant*, by shewing how it may be propagated from *Seed* upon any *Tree* what-ever. About *Christmas* when the

Berries

Berries are ripe, they may easily be made to stick upon the smooth *Bark* of any *Tree* you have a Mind to propagate them upon, whether it be the *Oak*, *Ash*, *Elm*, *Apple*, *Pear*, *Plum*, *Rose*, *Gooseberry* or *Current*, &c. The *Viscous Juice*, which encompasseth each *Seed*, will bind it fast to the *Part* you place it upon, and with this small Trouble you may expect young *Plants* the following Year, provided the *Birds* don't devour the *Seeds* you have sown, therefore a *Net* would do well to secure them. I have seen twenty *Plants* of *Ajacetoe* growing upon as many different Sorts of *Trees* and *Shrubs* in one Garden, which were propagated in the same Manner I have mentioned. And I believe it would be very useful in correcting the too great Vigour of some *Fruit Trees* and bring them to bear, by taking from them the *super-abundant Juices*, which are always destructive to *Prolificity*, either in *Plants* or *Animals*.

And now from the Account I have given of the *Generation* of *Plants* it appears that double *Flowers* seldom bear *Seed*, because the *Dust* of the *Apices* is too much crowded with the *Petals* or *Flower-Leaves*, which for that Reason cannot easily reach the *Style* or *Pistil* of the *Flower* which is always prominent, and above the *Petals*, in full *Flowers*. It appears likewise that the Natural Properties of *Fruits* or *Seeds* may be changed by accidental coupling with other *Plants*; and that the *Seeds* so alter'd, may rob us of our Expectations in *Planting*, by having their Principles debauch'd by the *Dust* of *distemper'd* and *degenerated Plants*. I could still add many other Remarks relating to this Discovery, and give my Reader a more ample Description of the *Generative Parts* of *Vegetables*, as I have observ'd them with the best *Microscopes*; but I conceive I have said enough to Explain what I propos'd upon this Head, and shall therefore now proceed to offer
such

such Experiments as I have made relating to *Soils*, and endeavour to show how they may be mended, alter'd, and improv'd chiefly by proper Mixtures with each other.

C H A P. III.

Of SOILS proper for the Nourishment of PLANTS, and composts for forwarding the Growth of PLANTS.

IF *Plants* in their several Degrees draw from the *Earth* such *Aliment* as is proper for their Substance, and that as the Nourishment they receive is more or less suitable to them, so they prosper accordingly; we may then reasonably infer that there is a Circulation of *Sap* in *Vegetables*, in some Respect like that of the *Blood* in *Animals*, as I have already endeavour'd to shew in my first Chapter of this Tract. For in *Animals* it is very certain that a *Diet* is required by them, and that *Diet* being concocted, is the Matter from whence the *Blood* is drawn, and that as the *Blood* is, so is the State of the Body, either healthful or distempred, then it reasonably follows that we ought as carefully to provide wholesome and natural Nourishment for the Welfare of each respective *Plant* we design to propagate. as we usually do the proper *Food* or *Diet* of every *Animal* we have a Mind to nourish. The Food of *Land Animals* is of three Kinds only, viz. *Flesh*, *Herbs*, and *Seeds* or *Fruit*. So likewise the *Foods* of *terrene Plants* is of three Sorts, *Sand*, *Loam* or *Mother-Earth*, and *Clay*, in their several Degrees; and as the several Kinds of *Flesh*, the various Tribes of *Herbs*, and the many different *Fruits* have each their respective *Animals* to feed upon them

them, so *Sand* in its several Degrees, *Loam* of different Sorts, and *Clays* of all Kinds have certain Proportions of *Salts* in them respectively, proper for the Nourishment of every *Plant*, *Fruit* or *Seeds*, I esteem to be the *Medium Nourishment* between *Flesh* and *Herbs*, and we find that every Land *Animal* will feed upon it, altho' their natural *Food* is either *Flesh* or *Grass*; as for Example, a Horse, whose proper Food is Grass, will eat Grain, and so Dogs and other Creatures who feed upon *Flesh*, will eat *Fruit*. And I am of Opinion that the *Salts* therefore of *Flesh*, *Fruit* and *Herbs* are the same, only differing in the Proportions of their Quantities; that is, one Pound Weight of *Flesh* may perhaps contain twice as many *Salts* as the like Weight of Grain or Seed, and one Pound of *Grain* twice the *Salts* as may be found in a Pound of *Herbs* or *Grass*. Now that all these *Salts* are proper for *Vegetation*, is, evident by the common Practice of burying *Straw*, or *Litter*, *Brakes*, *Haulm*, and such like, to enrich some *Soils*; again if *Fruites* and *Grain* be well consumed, one Load of it laid upon a Spot of Ground, will enrich it more then ten Load of Horse-Litter, or Common Dung, says Sir *Hugh Platt* from Experience, and we are very sensible of the Prodigious Effect of *Carion*, *Leather*, or any Parts of *Animals* apply'd to the Roots of *Vegetables*.

So on the other Hand in Natural Soils, what I call *Loam*, or *Mother Earth*, I suppose to be the *Medium* between *Sand* and *Clay* that is an Earth of a certain Temperature; partaking equally of them both. And indeed all *Soils* that I know of, may be reduced under these three general Heads, viz. *Sand*, *Loam*, and *Clay*; for all others, altho' they may bear different Names are in some Respect depending upon one or other of those *Gravels*,
and

and all the open *Soils*, 'till we come to the *Loam* I mention, are of the *Sandy Race*; and the binding *Earths*, from *Loam* downwards, 'till we come to the *Stiffness* of Chalk it self, may be ranged with the *Clay Kind*. I find all these *Soils* are alike tending to *Vegetation*, and have their *Salts* proper for it, but in different Proportions of Quantity; that is a Peck of *Clay* has perhaps twice as much *Salts* in it as the same Quantity of *Loam*, and that Quantity of *Loam* twice as many *Salts*, as the same Proportion of *Sand*. Now from this Argument of mine, it may seem at first View that *Clay* is the most proper *Soil* to forward the *Growth* of *Plants*, whereas we know that *Sand* is much more apt to produce *Plants* quicker than any other *Soil*; but give me leave to explain this Paradox. *Clay* whose Parts are closely wrought together, will not easily give out those *Salts* contained in it; neither can the tender *Fibers* of every Plant make their Way thro' it, in Search of their Nourishment; but if we open its *Parts*, by digging and breaking it into small Particles, and keep those *Parts*, open by a Mixture of some sharp *Sand*, or other Body of the like Nature, we shall not fail to see the Effects of its Vigour,

On the other Hand, *Sand* is apt to push forward the *Plants* growing upon it early in the Spring, and will even cause them to *Germinate* near a Month sooner than the *Plants* growing upon a *Clay*; the Reason is that the *Salts* in a *Sand* are at full Liberty, to be raised and put in Motion, upon the least Approach of the Sun's Warmth: But then as they are hasty in their Work, so are they soon exhal'd and lost.

The *Clay* has certain *Plants* growing upon it, which are natural to it, and consequently thrive better in it than in any other *Soil*.

And

And the *Sand* likewise has its natural *Plants*, which delight in it, and will not equally prosper in any other *Earth*.

However both the *Clay Plants*, and those of the *Sand*, will grow in the *loamy Soil* I have mention'd, for that it partakes of the Qualities of *Sand* and *Clay*, as Grain doth of *Flesh* and *Herbs*, in respect to the *Food of Animals*.

I might here take Notice that the Word *Loam* is variously receiv'd, and understood by *Planters*. Some mean by it the most common superficial *Earth* met with in *England*, without any Regard to the Proportions it bears of *Sand* or *Clay*. Others would have it more inclining to *Clay* than *Sand*, However I shall endeavour to avoid all Disputes that might arise concerning it, by once more repeating, that when I shall have Occasion to mention it, I mean only that Degree of *Earth* which equally partakes of *Sand* and *Clay*.

This *Earth* then, which I call *Loam*, may either be of a black, or yellow Colour; but let it be either the one or the other, Experience shews us that *Plants* of all Sorts will grow in it, and for the Reasons I have before mention'd, it appears to be a more beneficial *Soil* than any other where-ever it happens to be found.

Now, as I take it, seeing that *Loam* is so happy in its Productions, that even *Plants* naturally bred in different *Soils* will thrive in it, it then seems reasonable, that if by Mixtures of *Natural Earths* one with the other, we make such a Compost as may nearly imitate it, we may expect far greater Success from a Mixture of that Sort (especially in *Plantations* of durable *Trees*) than any Composition we can devise to be made with *Dungs*, or other forcing Ingredients. For it is very well worth our Remark,

that *Animals*, and *Vegetables* also of all Sorts, are more lasting, as they are fed by simple and natural *Diets*, as I have hinted before. It is true, *Hot-Beds*, or any other Means of the like Nature, would indeed forward the *Growth* of *Trees*, perhaps as much in one Year, as Nature of her self would do in six: Or as Dr. *Agricola* of *Ratisbonne* pretends by his artificial Compост to raise *Forrest Trees* to exceed the Height of twenty Foot in a few Days Time; but we may be assured they can never last out half their Days, for we find the same in *Animals*, but particularly in *Mankind*, who by Excess of unnatural *Foods*, and invigorating *Liquors*, shortens his Life; while on the other Hand, such Men as have bare Subsistence, and are forced thro' Necessity to live upon the natural Food of their own Country, are long-liv'd; I therefore would advise, as well from what I have said, as from the Observations and Inquiries I have made of the *Growth* of *Timber Trees*, that they may not be forced by any violent Means, if we design them to last long and improve themselves, to be valuable; neither to take them from a Nursery of rich Ground, and expose them afterwards in such *Land* where they may want the same Plenty of Nourishment they have been used to; for then they would certainly decline and deceive us. Let the Earth we design to plant them in, be fresh and well open'd in its *Parts*; and if it should be sifted, it will help the striking of young *Roots* at first planting, and support them 'till they can gather *Strength*.

I think I need not further explain, that equal Quantities of *Sand* and *Clay* well mix'd together, will afford us the desirable *Soil* we seek after, in Case the *Loam* or *Mother Earth* I mention, cannot conveniently be met with. But this has its greatest use, when we make new *Plantations*, for we ought also to examine

mine the Depth of the *Soil* underneath, into which our *Trees* are afterwards to push their *Roots*, and from whence they are to draw their chief Nourishment, and that may be best known from Observation; that is by examining the most vigorous *Trees* of every Kind, and observing the *Qualities* and *Depths* of the *Soils* they fed from, and from such Examples, to make our *Plantations* accordingly; we shall then find that an *Oak* will never make good *Timber*, if it be *planted* or *sown* upon a shallow *Rocky Soil*, and at the same Time that an *Ash* will grow there; but this I shall more fully explain in the next Chapter of *Forrest Trees*.

And now seeing that some delight more in the quick *Growth* of the *Trees* they plant, than the Advantages which would accrue to their Families, from a regular and natural *Growth* of their *Plantations*, I shall mention some *Mixtures* which have been experienced to forward the *Growth* of *Trees*.

Mixture the First. If the *Soil* be stiff inclining to *Clay*, let it be well broke and open'd, of which take about five Load, add to it an equal Quantity of *Heath Turfs* burnt, let these Ingredients be well mixed and sifted, or skreen'd together, after they have lain for a Winter in a *Heap* or *Ridge*. This Compost will forward *Trees* extreamly.

Second Mixture. To four Load of stiff *Soil* broke and open'd as before, add as many Load of *sharp Sand*, to which put two Loads of the *Ashes* of burnt *Furzes*, *Gorse*, *Fern*, *Weeds*, or *Wood*; let this be well mix'd together about *September* or *October*, and be laid up in a *Ridge* 'till the *February* following, to be skreen'd or sifted for Use. Sir *William Bruce*, a Gentleman of *Scotland*, made use of the like *Mixtures* in his Garden, with the Success he desired.

Third Mixture. One Load of Rotted Wood, such as may be found under a Wood Pile, or for want of that, the same Quantity of Rotted Leaves. To either of these add a Load of burnt Grass Turf, two Load of Sand, and the like of stiff Soil, this Composition must be well mix'd and laid in a Ridge from October till February, and be sifted for Use. N. B. These artificial Soils, should always be compos'd about October, and sifted the following Spring just before you use them; for if you should prepare them in the Spring, the Summer's Heat would exhale their Volatile Spirits, and besides Weeds would be apt to rob them of their Nourishment, unless they were to be made in some shady Place under Trees.

Fourth Mixture. Take the Quantity of a Load of Rape Seeds, after the Oyl is press'd from them, which may be very easily had at the Rape Mills at a small Expence; add to them two Load of Sand, one of stiff Soil, and one of burnt Heath, or Grass Turf, prepared as the others, and sifted, will greatly forward the Growth of any Plant.

Fifth Mixture. Take one Load of Malt Grains (after Brewing) add to it two Load of Sand, and two of stiff Soil, mix'd and prepared as before, it will make an incomparable Compost to hasten the Growth of Plants.

Sixth Mixture. Sheeps Dung, with a like Quantity of Wood Ashes, and twice as much Loam, or Mother Earth, prepared as before, will greatly forward the Growth of Herbs and Trees.

Seventh Mixture. Take of Horse Dung well consumed, two Load, add to it one Load of Turf Ashes, two Load of Sand, and two of stiff Earth, prepare this Mixture as before, and it will greatly forward Germination of Plants: But if Sea-Coal Ashes are more easily found, put them in the Place

of the burnt *Turf*, and then add one Load more of *stiff Earth* to the Compost.

And now besides the several Compositions which I have set down, I might add those which I have known to have been prepared with the *Soil of Poultry*, that feed upon Corn or Grain. I found those Ingredients very hot and full of Salts, greatly tending to *Vegetation*, and abundantly quicker in their Operation, than the *Soil of Animals*, which only feed upon *Herbs*; but that is no great Wonder, if it be true what Sir *Hugh Platt* says, that one Load of Grain will enrich Ground more than ten Load of common *Dung*, and also from what I know from Experience, and have mention'd in the Fourth and Fifth *Mixtures* prescrib'd in this Chapter. Now if simple *Grain* by infusion only (if I may so term it) in the *Mixtures* or *Composts* I have directed, has a good Effect, we may easily imagine how much more powerful it will be when it has pass'd through the Bodies of *Animals*. I could say much more upon this Head, but as it is my Design to be as short as may be convenient, and purposing chiefly in this Treatise to contribute such Experiments as may tend to the Improvement of *Plantations of Forrest-Trees*. I shall not here enlarge upon *Soils*, but leave some Particulars for another Work, and sum up this Chapter, with two or three short Remarks, first that a Preparation of natural *Soils* answerable to the *Loam* or *Mother Earth* I have mention'd, is certainly the best for all sorts of *Forrest Trees* to be planted or sown in, if we design them to make good Timber; and if it is rather desired that such *Trees* should grow quick, and consequently be subject to decay early, or be prejudiced by *Blight*s, I have made mention of such forcing *Composts* as will set them forward in their Growth; but in my Opinion might be

C H A P. IV.

*Of Timber-Trees and Underwood, and of Dressing
 and Cleaning of Woods.*

AS there is nothing which contributes more to the *Honour, Beauty, and Welfare* of an Estate, than timely and sufficient *Plantations of Timber Trees*, so I have chose to make the *propagating of Timber* my present Subject, and what I have said in the former Chapters may I hope contribute something towards our Success in the Undertaking, which will so greatly contribute to the Welfare of every Man of Estate, if it be rightly understood : For altho' a Gentleman may perhaps be possess'd of a plentiful Fortune, suppose of 10000 *l. per Annum*, he ought certainly to consider that in process of Time he must provide Fortunes for Children out of that Estate, proportionably to his Honour ; and again, his Children must likewise make farther Provisions out of their several Parcels for their Issue, and so on, 'till an length, in six or seven Generations, we shall find the paternal Estate cut to Pieces into so many little Shares that there will hardly remain any Idea of the plentiful Stock of their Ancestors. Now I say, it would certainly be a Token of great Wisdom, for every Gentleman of Fortune, not only to consult all proper Means how to maintain the Bulk of his Estate entire, but continue it so in his Line wisely guarded against the Hazards of Fortune, and even the natural Consequences I mention, by timely and necessary *Plantations* upon it, which would be so many

many Monuments of his Wisdom, and improving Treasuries for the good of his Posterity ; and besides how beneficial would such *Plantations* be in Case of extraordinary Accidents, the Profuseness of a young Heir ; the Discovery of Iron or Lead Mines, where Wood is of such extraordinary Use ; or for the raising a Sum of Money upon any Emergency : I may add likewise, besides the private Interest of the Proprietor, it would be of general Use, and for the Nation's Good. How happily is *England* situated for Trade, what Benefits doth she receive from her Shipping, and therefore how profitable and useful is her *Timber*, which will yet become more Valuable than ever, in that so much is continually cut down, and very little care taken to make new Plantations for future Benefit. In a Word, the present State of *Timber* in *England* is so very inconsiderable, in Respect to the great Use made of it, and even that which remains growing is generally so much neglected in its Culture, that I hope some Directions for its Improvement may not be unacceptable to the World.

The *Trees* which have been commonly propagated in *England*, for *Timber*, are the *Oak*, *Ash*, *Beech*, *Elm*, *Chestnut* and *Walnut* ; these are of the upper Class, and we may add to them the *Ilex* or *Ever-Green Oak*.

Of the lower Rank for *Underwood*, or more indifferent Use, are the *Hazel*, *Alders*, *Willows*, and some others of less Note.

The *Oak* like all other *Plants* has its Varieties, which are taken Notice of by the *Botanists*. I have observ'd about five Sorts in *England* ; but I shall only recommend two Kinds of them to be planted for *Timber*. The first and best in my Opinion is the *Upright Oak*, which grows more Erect than any other ;

ther; and the second is the *Large spreading Oak*.

We have many Instances of these Kinds that have attain'd to such prodigious Greatness of Stature, that the *Timber* alone of one Tree has been sold for upward of 50 *l*. The *Oak* doth not only afford us the most serviceable *Timber* for Naval Architecture, but also for other Building. Its *Bark* is useful to *Tanners* and the *Oak* is therefore cut down about *April* when its *Bark* will peel. The *Acorns* are excellent Food for Hogs. This Tree delights in moist Ground of a good Depth, and will prosper in the coldest *Clay*. and, as Mr. *Evelin* says, in Gravel also. It is noted likewise that some *Oaks* having been sown in Hedge Rows, have in the Space of 30 Years born a *Stem* or *Trunk* of a Foot Diameter. I have my self seen some seedling *Oaks* of 20 Years Growth of near that Substance, which had never been removed from the Place where they were sown, and I would advise that every Plantation of *Oaks* be set from *Acorns* on the very Spot where they are to remain, and that we are likewise careful to chuse our *Acorns* from thriving vigorous Trees, for the Reasons I have before mentioned; the Distance between them ought to be about 33 Foot, and the said Space between the *Oaks* should be inter-sown or planted for *Underwood*, as I shall direct in the following Chapter.

Of the *Ash* there are two Sorts (falsey distinguished by the Names of *Male* and *Female*), which most deserve our Care in that they are quick Growers, and rise to a prodigious Stature; besides these there are several other Kinds which are not worth our Notice. So that we ought to be careful in the choice of the *Keys* or *Seeds* we design to sow. I have heard of *Ash* Trees of 40 Years Growth from the Seed, that have been sold for 25 Pounds apiece, which have grown on Plains in light *Earth*, not very deep, and Mr.

Evelin

Evelin tells us, that one Person planted so much of this sort of *Timber* in his Life time as was valued worth fifty thousand Pounds to be bought, which he justly remarks was very good Encouragement for a small and pleasant Industry. The Keys of this *Tree* are sowed about *October*, or else may be laid at that time in *Sand*, S. S. S. 'till the following Spring, and then sown. The *Timber* of the *Ash* is used for Ploughs and Axel-trees, Wheel Rings, Oars, and many other mechanick Works, and if we propagate the *Ash* for *Underwood* only, it will turn to good Account for Hoops and Hop-Poles. It may be cut about *February*.

The *Beech* delights in Mountains. In *Berkshire* in the Chalky-Hills this *Tree* is very prosperous, and attains a considerable Stature; its *Timber* is used about Keels of Ships, and many Implements of Husbandry; it is the most common *Firewood* of *England*, especially about *London*, where Billets are usually burnt. Among the Coal-Pits near *New-Castle upon Tyne* this Wood is much used to make Cart Ways, where for many Miles the Wheels of the Coal-Waggons run upon it, which save the Expence of Horse Fleth. This Wood will remain sound for many Years, in those marshy Lands, and is much esteem'd for that use. From the *Seed*, which is call'd *Beechmast*, the *French* have long since drawn a very sweet Oil for eating, and lately the same has been practised in *England*. This *Seed* is likewise good to feed *Deer*; *Hogs* and *Fowl*; it may be sown about *October*, or put in *Sand* like the *Ash-Keys*, 'till Spring, the better to preserve it from *Vermin*. The *Timber* may be cut as the former.

We have many Sorts of *Elm* frequent in *England*, among which the *Vulgar* or *Mountain Elm* is counted the best for *Timber*; I shall therefore recom-

mend this Sort to the Planter, before all others. It may be propagated from the *Seed*, or *Samara*, which ripens and falls from it towards the latter End of *April*, or Beginning of *May*, it must then be sown in fine sifted *Earth*, or what I call *Loam* in the foregoing Chapter. This *Seminary* must be made in a shady Place, and water'd from time to time, as the *Earth* begins to dry ; but besides this Way of raising *Elms*, we may either propagate them from *Layers*, or *Suckers* ; which last must be transplanted into *Beds* of fine *Earth* about the Beginning of *March*, and kept well water'd. And so naturally is the *Elm* inclin'd to *Vegetation*, that I have heard some affirm, by sowing only the *Chips* of it in a Piece of plow'd Ground, they have rais'd a large Quantity of these Trees, which perhaps is not impossible ; for I am assured in other Cases the *Buds* and *Leaves*, nay the very *fibrous Roots* of *Plants* have been made to strike *Root*, and produce *Branches*, *Leaves*, *Flowers* and *Fruit*, by setting them half way in the *Earth*, and Mr. *Fairchild* of *Hoxton* has done the like with *Leaves* of the *Laurustinus* ; however let us raise our *Elms* which way we will, I shall advise that they be not *planted* out of their first *Beds* 'till they have stood there two Years ; and then remove them to greater Distances from each other, and let them so remain 'till you plant them out for good, at about 20 Foot Distance, in *Beds* of the sifted *Loam* directed, they grow quick, give a fine Shade, and afford valuable *Timber* ; and if the *Witch Elm*, or *Dutch Elm* be grafted upon this Kind, we may expect them to make *Shoots* of above 8 Foot long in one Year, and produce *Leaves* of an extraordinary Bigness, but the Wood will then be not so valuable. This Tree delights in an *Earth* competently fertile, neither too dry or sandy, or too cold and spungy ;

nor does it require a deep *Soil*. Let it be moderately refreshed with *Water* after *planting* ; and to keep the *Earth* about the *Roots* more open, and ready to receive *Wet*, cover the *Bed* it is *planted* in with rotted *Fern*, or other such like Matter. A Year or two after *planting*, you may refresh the young *Fibres* at the Extremities of the *Roots* with some fine sifted *Earth*, or any one of the four first *Mixtures* mention'd in the foregoing Chapter, which will make the Tree shoot prodigiously, for that they contain *vegetable Salts* in great abundance. The *Timber* of this Tree is very serviceable, especially where it may always lye wet it will last a long time : it is mightily used for Pipes, Pumps, Mills, and such Parts of Ships as lye constantly under *Water* ; in a Word it is almost of general Use. The time of Felling it is from *November* to *February*.

We have two Kinds of *Chestnut* in *England*, that which bears *Edible Fruit*, and the other which is call'd the *Horse-Chestnut* : The first of these Trees affords good *Timber*, and the Latter is only desirable for its pleasant Shade and beautiful Flowers ; these Trees may both be raised by setting the *Nuts* about three Inches deep, in a light sandy *Soil*, towards the latter End of *February* or Beginning of *March* ; but as the first only is useful, so I shall chuse to recommend it to the *Forrester*. It delights in high Grounds remote from *Water*, which would spoil both its *Timber* and *Fruit*, and should indeed be set from the *Nut*, where it is always to remain, for it's apt to suffer greatly by removing, and spread too much in its Branches, when it loses its *Tap-root*, as all other *Tap-rooted* Trees are known to do. Its *Timber* is lasting if it be kept dry, and good for Building ; and if it be planted for *Underwood*, it will afford excellent Poles and Stakes in nine Years after sowing,

ing, worth at least 10s. *per* Hundred : The *Fruit* is sometimes used at our Tables, but more commonly given to *Deer* and other Cattle to fatten them. We may fell this *Tree* any time between *November* and *February*.

Among the *Botanists* there are reckon'd many sorts of *Walnuts*, two only of which I shall recommend to the *Planter*, viz. That with the *soft Shell* for the sake of the *Fruit*, and that with the *black Grain* for the Goodness of its *Timber*; they are both rais'd from the *Nuts* like the *Chestnut*, and should like them be sown in the Places where they are to remain. They are in great Danger of Death if they lose their *Tap-root*, but will thrive extreamly if they have Depth of Earth to strike into. The *Walnut* grows well in *Loam*, but will flourish also in *Chalk* or gravelly *Soil*, either on hilly Ground or in a *Vale*, which (I think) shews it to be a foreign *Plant*, for as I have observ'd every *Plant* natural to *England*, has a *Soil* and *Exposure* peculiar to it self, and will scarce be made to grow in any other Sort of *Land* or *Situation*. I have seen some *Walnut Trees* of forty Years *Growth* from the setting of the *Nuts* that were valued at five Pounds apiece, and others standing by them which were Trees planted at the same time (as the Owner himself inform'd me) that were not worth thirty Shillings a Tree; and the like Observation has been made of other *Tap-rooted Trees*, but particularly the *Oak*; so great is the Difference of *Growth* in downright Rooted *Plants* when they are set from *Acorns* or *Nuts*, and *transplanted* from the *Nursery*. The *Timber* is much used for Chairs, Cabinets, and Household Furniture; it is durable, and an Enemy to Worms, from its exceeding Bitterness. The *Nuts* yield abundance of Oil, and take Place among the best *Fruits* for the Table. This *Tree* may be

be cut down when the *Sap* is fix'd, *i. e.* from *November* to *February*.

The *Ilex* or *Evergreen Oak*, is a *Plant* which produces admirable *Timber*, but is more particularly valuable for its *Knee Timber*, which is much tougher than that of our *English Oak*; it is in such Request among our *Ship-Carpenters* that many *Ships* laden of it has been brought to *England*. The *Tree* is of quick *Growth*, and will attain to a very considerable height, even to equal the tallest of the *English Oaks*, to which Perfections we may also add the Beauty of its *Leaves*, which are green all *Winter*.

That curious Gentleman *Robert Balle*, Esq; *F. R. S.* has among other Improvements for the Good of his County propagated a large Parcel of these *Trees* in *England*, some of which have in about 30 Years Space grown to a considerable Greatness of Stature. And it is to be wish'd that others would follow his Example in the Culture of this beautiful and profitable *Tree*. This Gentleman has rais'd some thousands of them from *Acorns*, and transplanted them with Success and great Judgment; and to follow his Method, we must set the *Acorns* in *Loam* well sifted, in Garden Pots in *February*, and turn them out with the Earth about their *Roots* when they are two Years *Growth*, to transplant them afterwards at proper Distances, where they are to remain. These, like our *English Oaks* are *Tap-rooted*, and therefore delight in deep Soil, they prosper in moist Land, rather on a Plain, than on hilly Ground. If we consult the *Anatomy of Plants*, we ought to be very careful not to injure their *Tap-roots*, which are always answerable to the *leading Shoot* on the *Top* of the *Tree*; it is therefore reasonable to believe that a *Plant* by losing that *downtright Root*, is in Danger of losing also the *Top Shoot*, which is fed from it. And altho' a

Tree

Tree may strike fresh *Roots* after the *Amputation* of this *leading Root*, yet we may find by Experience that the *Sap* will then push forth *Branches* in the *Sides* of the *Stem*, and discontinue its upright *Growth*. We may fell this *Tree* as we do the other *Oak* for the sake of its *Bark*, the *Acorns* are good Food for *Deer*, and *Fowl*, which greatly delight in the Shelter of these *Trees*.

Having mention'd the most valuable *Trees* for *Timber*, I am in the next Place to take Notice of such others as will afford us the most valuable Crops of *Underwood*. I have already observ'd that the *Ash* and *Chestnut* may be order'd in this Manner, and bring considerable Returns to the Proprietor. The next which I shall propose for this Use is the *Hazel*, which if it be rightly managed will turn to good Account in *Coppices*. This *Plant* may be rais'd from the *Nuts* sown a little after they are ripe, in cold, dry, sandy Ground ; but if the *Land* happens to be more inclin'd to *Clay*, plow it in *Autumn*, and let it mellow with the Frosts 'till *February* before you sow them. The learned advise that after the *seedling Plants* are come up, they should be weeded or hough'd so as to leave the *Plants* at three Foot Distance from each other, and after three Years *Growth* to cut them off within half a Foot of the Ground, by which Means they will be made to shoot forth many *Twiggs* from each *Stem*, which in nine Years time (*i. e.*) twelve from putting in the *Seed*, will be fit to cut for Hop-Poles, Hoops, Fagots, and other such uses ; but if you rather chuse to use them for Hurdles, then they may be cut at five Years *Growth*. After the first Curting, you may cut again in seven or eight Years, if they like the Ground, for Poles and Hoops as before, and so continue to do from time to time, as you see Occasion. But these *Trees* may

may be likewise propagated by *Suckers*, which are frequently found growing about the Roots of Old Trees, but are not very certain in their Growth, after transplanting, unless they are carefully water'd till they have struck good Roots. In a Plantation of this Kind, which may be made at any time between *October* and the Beginning of *March*, when the Weather is open, these *Suckers* must be set at three Foot Distance, and cut down within half a Foot of the Ground about the Beginning of *April* following; or they may also be propagated by laying down their *Branches* or *Twiggs* about three Inches in the Earth, which will furnish us with abundance of young *Plants* in a Year's time. This Work must be done about *October*.

The next I shall treat of is the *Willow*, an *Amphibious Plant*. There are many Sorts of it distinguish'd by the *Botanists*, which should I mention here by their several Names, I might perhaps perplex my Reader, and shall therefore only mention them as two Kinds, first the *Oziers*, which afford *Twiggs* for the Basket-makers, and binding Rods, and secondly the Tree Kind of *Witby*.

First then the *Oziers*, which afford us *Twiggs* for *Wicker-works*, are raised by setting *Slips* of two or three Years Growth about a Foot deep in marshy or wet Ground, at two Foot distance from each other; this Work is best done about the middle of *February*, if the Weather be open; the second Year after *Planting* they may have their *Tops* cut off, leaving their *Stems* about a Foot above Ground, so will they put forth *Twiggs* which must be again cut down early the *Spring* following, which Work being continued every Year, the Owner will find considerable Advantage from such *Plantations*. An Acre of Ground thus managed will turn to better Account

Account than the like parcel of *Land* sown with *Wheat* or any Grain whatever, and it may be for this Reason that some would pretend to raise vast Sums of Money by planting several thousand *Acres* in this way, as I have been informed several Gentlemen propose to do. It is certain at present *Oziers* turn to good *Account*, but I am of Opinion that if we had only as many more planted as we have now growing in *England*, the Markets would be overstock'd with them, and their Price would fall. And besides, every *Ground*, as I have said before, will not produce them. In this Treatise may be found the several sorts of *Trees* for Use, the different *Lands* they require for their Welfare, and the vast Returns they would bring in, if large *Plantations* were made of the several kinds, by a Discreet Planter, who knew how to allot to every *Soil* the *Tree* proper for it. But I shall proceed now to give some Directions for the propagating of the large *Witby* or *Tree* kind, which will also in a few Years time afford profitable; though not very durable *Wood*. Its Use is for *Perches*, *Rake-staves*, and such like. *Branches* of three or four Years *Growth*, about twelve Foot in length; being set near two Foot deep in the Ground in *February*, about fifteen Foot asunder, will soon make handsome *Trees*, which will bear *Lopping* every fifth Year; these love wet Ground, and will not be made to prosper in any other. I might add, that this and several other sorts of *Willow* might be rais'd from *Seeds* which are born on the *Female Jule*, if we sow them in wet boggy Ground, as is practised in *France* and other Countries.

The *Alder*, more than all other *Trees* beside, delights in *Boggy Places*, and may be cultivated in the coldest wet Grounds. This *Amphibious Plant* is best raised from *Truncheons* or *Branches* about three
Foot

Root in length, setting them about *February*, a Foot deep in the Ground; they thrive exceedingly on the Banks of Rivers, and will make such *Shoots* in three or four Years time, as may be then cut and sold to good Advantage for *Poles* and other Uses; it is a lasting *Wood*, if it lie continually under Water, and if we believe *Jos. Baubimus*, will in course of time turn to *Stone*, but if it be exposed so as to be sometimes wet and sometimes dry, it is of no Duration. This *Plant* is also raised from *Seeds* in *Flanders*, where they make great Profit of it.

Thus have I given a short View of the several Sorts of *Trees* which I would recommend to be planted for *Timber* and *Underwood*; I have endeavour'd to ascertain the several *Soils* and *Situations* proper to each of them, which I hope may be of some use, for that in the Quantity of an Acre of Ground we find *Earths* of very different *Qualities*, to any of which one or other of the *Trees* I have named may be allotted. And now as I suppose that every Gentleman who is about to make a *Plantation*, will certainly make it upon his own *Land*, or at least on such a Parcel of Ground as will by right be continued after his Demise in his Family, it is reasonable enough to believe, that such Persons may have upon their *Estates* some *Timber* already growing, some *Trees* prospering, others decaying: Now I say it would surely be good Husbandry to fell such *Trees* as begin to decline, either from too great Age, or too near Neighbourhood with others.

To the first, I can pretend to give no other Direction than to have them cut down at the proper *Season*; but to the second, (*i. e.*) where they grow too close together, leave the most thriving *Trees* to grow and improve themselves, and cut up the others *Root* and *Branch*, leaving convenient Distances between

tween the *Trees* which remain standing, which ought to be only such as have their *Tops* or *leading Shoots* prosperous and in good Order. Our Countryman *Lawson*, who had for above 40 Years study'd the Improvement and Management of *Woods* and *Timber Trees*, has given us a very good Lesson concerning the *dressing* and *cleaning* of *Woods*, which being short, and much to the Purpose, I shall insert in his own Words.

“ How many *Forrests* and *Woods*, wherein you
 “ shall have for one *thriving Tree*, four (nay some-
 “ times twenty four) *evil thriving*, rotten and dying
 “ *Trees*, even while they live; and instead of *Trees*,
 “ thousands of *Bushes* and *Shrubs*! What *Rotten-*
 “ *ness*, what *Hollowness*, what *dead Arms*, *wither'd*
 “ *Tops*, *curtail'd Trunks*, what *Loads* of *Moss*,
 “ *drooping Boughs*, and *dying Branches* shall you
 “ see every where, and those that are in this sort, are
 “ in a manner all unprofitable *Boughs*, *canker'd*
 “ *Arms*, crooked, little and short *Bodals*. What an
 “ infinite Number of *Bushes*, *Shrubs*, and *Skrags*
 “ of *Häfels*, *Thorns*, and other unprofitable *Wood*,
 “ which might be brought by dressing to become
 “ great and goodly *Trees*! Consider now the Cause.
 “ The *Lesser Wood* hath been spoiled with care-
 “ less, unskillful, and untimely *Stowing*; and much
 “ also of the *Great Wood*, The *greater Trees* at
 “ their first rising have fill'd and overladen them-
 “ selves with a Number of *wasteful Boughs* and
 “ *Suckers*, which have not only drawn the *Sap* from
 “ the *Bowl*, but also have made it knotty, and them-
 “ selves and the *Bowl* mossy for want of *Dressing*;
 “ whereas, if in the prime of *Growth* they had been
 “ taken away close all but one *Top*, and clean by the
 “ *Bulk*, the Strength of all the *Sap* should have
 “ gone to the *Bulk*, and so he would have recover'd
 and

“ and cover'd his *Knots*, and have put forth a fair,
 “ long, and straight *Body* for *Timber* profitable, huge
 “ great of *Bulk*, and of infinite Last.

“ If all *Timber Trees* were such (will some say)
 “ how should we have crooked Wood for *Wheels*,
 “ *Coorbs*, &c.

“ Answer, Dress all you can, and there will be
 “ enough *crooked* for those Uses.

“ More than this, in most Places they grow so
 “ thick that neither themselves nor *Earth*, nor any
 “ thing under or near them can thrive, nor *Sun* nor
 “ *Rain* nor *Air* can come at them.

“ I see a Number of *Hags*, where out of one
 “ *Root* you shall see three or four (nay more, such
 “ is Men's unskilful greediness, who desiring many,
 “ have none good) pretty *Oaks* or *Ashes* straight and
 “ tall; because the *Root* at the first *Shoot* gives *Sap*
 “ amain: But if *One* only of them might be suffer'd
 “ to grow, and that well and cleanly prun'd all to
 “ his very *Top*, what a *Tree* should we have in time,
 “ and we see by those *Roots* continually and plen-
 “ tifully springing, notwithstanding so deadly woun-
 “ ded, what a Commodity should arise to the *Own-*
 “ *er* and the *Commonwealth*, if Wood were che-
 “ rish'd and orderly dress'd. The waste *Boughs*
 “ closely and skilfully taken away, would give us
 “ store of *Fences* and *Fuel*, and the *Bulk* of the
 “ *Tree* in time would grow of huge length and
 “ bigness.

And now from what has been said relating to the
 Cleansing, Dressing, and Pruning of *Woods*, two
 Things naturally offer to the Benefit of the Proprie-
 tors: *First*, That the Profit which will accrue from
 the fall of distemper'd and decaying *Timber* and
Underwood, will afford a Sum of Money sufficient
 to make large *Plantations*: And *Secondly*, the *Trees*
 which

remain standing after this Weeding is perform'd, will grow and prosper exceedingly, by being then at liberty to receive a greater quantity of *Nourishment* from the *Earth*, and by enjoying such a Proportion of *Air* as their Age and Strength will require.

CHAP. V.

The Method of planting an Acre of Ground with Timber-Trees and Under-wood; with the Profits which will arise from that Plantation in Nine Years, Seventeen Years, and Twenty Five Years after Planting.

IF we consider the many Advantages this Nation in general has receiv'd from the *Timber* of its own *Growth*, how by its powerful Fleets (the Offspring of its *Oaks*) *England* has gain'd the Dominion of the Seas, and now enjoys the Benefits of an Universal Commerce; without mentioning the Advantages it affords to every particular Owner of it; It is wonderful to me, that the propagating of *Timber*, a Commodity so Valuable and Ornamental, should be so little encouraged now-a-days among us, when our natural *Store* is so near being consumed, that to all appearance in a few Years time we may be forced to seek it in Foreign Countries.

Now, if I may be allow'd to judge in this case, I conceive that the present decay of our *Timber* may depend upon one or other of the following Reasons.

First, That the making new *Plantations* will be an immediate *Expence* to us: Or,

Secondly, That we cannot hope to reap any *Profit* to our selves from such *Plantations* as might be made in our *times*; or else,

Thirdly,

Thirdly, That many Gentlemen who are already Masters of Woods, receive little Profit from them for want of due Care and Management.

The first and last of these Objections are answer'd, I think, in the foregoing Chapter, where the Advantages of Cleaning and Dressing of Woods are set down; in that not only Money is provided thereby to answer the Expence of *New Plantations*, but also the standing *Trees* will be put into a thriving Condition.

It remains now for me to answer the other Objection, *viz.* That we cannot propose to reap any Profit to our selves from the Plantations which might be made by us. But I hope the Method which I shall herein propose, will give full Satisfaction to that point.

For which end I would recommend that every Plantation which shall be made either in this present Age, or hereafter, may consist partly of *Forrest* or *Timber-Trees*, and partly of *Coppice* or *Underwood*.

Now the *Underwood* which I propose to be planted and intermix'd among the *Timber-Trees* or *Standards*, may be cut in eight or nine Years after Planting, and so from time to time every eighth Year will produce a very considerable Return, as will appear hereafter in a stated Account.

Secondly, The Plants for *Underwood*, which will encompass on every Side the young *Timber-Trees*, will not only shelter them from Blasts of Wind which might be hurtful to them, but will also (by keeping off the circumambient Air) draw them into Strait and tall Trees, 'till they can shift for themselves. and are strong enough to bear the Severity of the Weather.

But to proceed, let us make choice of such Ground to plant upon, as may not be thought proper for Corn, or at least such as will yield only a poor Crop of Grain. I suppose such Land will be worth about five Shillings *per Acre* by the Year, and by all Means let it be, if possible, near some Navigable River, for the greater Ease and Cheapness of Carriage. Now as I have before hinted that as the Land is, so must we allot the proper Plant for it, I only wish it may be deep enough to nourish the *Oak* and *Ilex*, which are *Tap-rooted Plants*, and therefore delight in deep Soil.

Supposing then we are fortunate enough to meet with an Acre of Ground proper for *Oaks*, we must first encompass it with a good Fence, and then either Digg or Plough the Land at a proper Season, to lye Fallow for some time, 'till the *Turf* be mellow'd and fit for our purpose.

An *Acre* of Ground contains 160 Square Perch or Rods, each Rod being 16 Foot and a half. This Quantity of Land must be fenced about with a Ditch six Foot wide, three Rows of Quicksets planted upon the Sides of its Banks at a Foot Distance from each other, and a dry Hedge on the Top.

A Labouring Man working for *one Shilling per diem*, may prepare nine Foot of the Ditch in length in one Day, and cut Stakes and Bushes and make about five Rod of the dry Hedge in a Day, so that he may prepare the Hedge, make the Ditch, plant three Rows of Quicksets, and pay the Expence of them at the Rate of Two Shillings *per Hundred*, for about Three Shillings the Perch; so will the whole Charge of making a Fence about an Acre of Land be Seven Pounds Sixteen Shillings; but we may Fence in two Acres of Land after the same Rate, being 32 Perch long, and 10 Perch wide, for Nine Pounds

Pounds Six Shillings, for the same Reason that if one Hundred Hurdles will hold a thousand Sheep, two Hurdles added to them will fold two thousand Sheep, that is if the Sheep Pen has 49 Hurdles on each Side, and one at each End, it just contains half the Quantity of Ground that it would do, if it had the Breadth of two Hurdles at the Ends. *N. B.* A Pole or Perch planted with three Rows of Quick-fets will take up about 48 Plants, so will there be required to plant about an Acre 2496 Plants.

Thus having provided a good Fence to defend our young Plantation from Dangers of Cattle and other Inconveniencies, the next thing to be done is to prepare the enclosed Land for Planting, which may be perform'd several Ways.

Supposing the Land to be encumber'd in the worst Manner with *Bushes, Whinns, or Furze, &c.* so that a Plow cannot be us'd upon it, then may it be dug and clean'd for about Sixpence the square Pearch; the whole Acre, if it be dug at that rate, will come to four Pounds. But if the Ground should happen to be in that State that a Plough can work in it, an Acre may be plow'd for about twelve Shillings.

The Land being thus prepared, one Acre will contain forty Plants of Oak at 33 Foot Distance, and as I have hinted before that all Tap-rooted Trees are endanger'd by removing, and that when they are transplanted they seldom come to the Perfection of those which are raised from Seed, and remain always in the same Place; I shall therefore recommend that forty Beds of good Natural Soil be prepar'd on the Acre of Land at the aforesaid Distance of 33 Foot from each other, and that in each Bed five or six Acorns be planted about four Inches deep in *February*, which Season I chuse rather than *Autumn*, because the over wet of some Winters might rot the Seeds,

Seeds, or Mice, Squirrels, and such like Animals might destroy them.

These forty Beds may well be prepared by one Man in three Days, at one Shilling *per Diem*, two hundred Acorns may be worth about six Pence, and the planting of them be worth about six Pence more, which makes in all four Shillings.

The Acre of Land being thus sown with Oaks, we may interrow the remaining Part of the Ground with *Ash-Keys* which have been kept the Winter in dry Sand, these will turn to very good Account for *Underwood*, and the Land is already dug or plow'd for our purpose.

One Bushel of *Ash-Keys* may be worth Two Shillings, the sowing them One Shilling, and the Harrowing the Ground after Sowing will be worth five Shillings more, in all Eight Shillings. The *Acorns* and *Ash Keys* will come up the first Year, and must be hough'd and cleans'd from Weeds. One Man may do this Work in three Days, leaving the Distance of three Foot between the *Ashen* Plants, the Expence of this weeding will be Three Shillings, for I rate a Man's Work at One Shilling *per Diem*, because I suppose such Plantations will only be made in those Places where Land is cheap, and consequently every thing else is valuable in Proportion.

The second Year we may draw some of the young *Oaks*, leaving a single Plant in each Bed; now it is likely that all the *Acorns* which were put into the Ground may not come up, therefore I would advise as the surest way to have our Expectations answer'd from the *Seeds* we sow, to try the Goodness of them before they are Sown, which may be done by putting them in Water, and planting only those which sink quickly to the Bottom.

An Acre of Land thus Fenced, Dugg, Cleanfed and Planted, comes to Twelve Pounds and Eleven Shillings, and Two Acres Dressed and Planted in like manner will coft Eighteen Pounds Sixteen Shillings.

But if the Land be clean enough to admit the Plow, then the Charge of Fencing, Planting, &c. of one Acre, will be Nine Pounds Three Shillings, and the Expence of Two Acres Dress'd in the ſame Manner, Twelve Pounds.

In Nine Years after this Plantation has been made, the Aſh Plants will be fit to be cut for Poles or Hoops, worth Ten Shillings *per* Hundred : If the Plants ſtand at a Yard diſtance from each other, the Acre of Land will then contain about 4800 Plants, which may be ſold for Twenty Four Pounds. The Quickſet Fence muſt likewiſe be cut down, and will yield about ten Load of Buſhes, we will ſuppoſe them only worth Five Shillings *per* Load : altho near *London* they ſell for four times as much.

The whole Charge of Fencing, Digging, and Planting an Acre of Land with *Oaks* for *Timber* and *Aſh* for *Underwood*, with the Profit of the firſt Nine Years *Growth* may be ſeen in the following Account.

Account of the Nine Years after Planting, or First Cutting.

	<i>l. s. d.</i>		<i>l. s. d.</i>
Expence of Fencing, Digging and Sowing an Acre of Land for Timber and Underwood.	12 11 0	Received for 4800 Ashen-Poles, at ten Shillings per hundred.	24 00 0
Interest of the aforesaid Sum for 9 Years, at 5 per Cent.	05 12 6	Received more for 10 Load of Bushes, at five Shillings per hundred.	02 10 0
Rent of the Land for nine Years, at five Shillings per Acre, per Ann.	02 05 0	9 Years Gain.	26 10 00
For Cutting 4800 Ashen-Poles, one Man 5 Days, at one Shilling per Diem.	00 05 0	9 Years Expence.	20 13 06
9 Years Expence.	20 13 6	Neat Profit of the Plantation in 9 Years.	05 16 06

After this Cutting we may cut again in eight Years time, and expect 4 or 5 Poles on each Ashen Plant.

Account of the 17 Years after Planting, or Second Cutting.

l. s. d.

Rent of the
Land for eight
Years at 5 Shil-
lings per An-
num. } 02 0 0

Expence of
Cutting 19200
Ashen Poles (re-
ckoning four to
each Plant) one
Man 20 Days at
one Shilling per
diem. } 01 0 0

17 Years Expence. 3 0 0

l. s. d.

Received for
19200 Ashen
Poles, at 10
Shillings per
hundred. } 096 0 0

Receiv'd more
for 10 Load of
Bushes at five
Shillings per
Load. } 02 10 0

Gain'd clear
of Expences by
the first cutting. } 05 16 6

The Interest
which might
be gain'd on 5*l.*
16*s.* 6*d.* in eight
Years at 5 per
Cent. is about. } 02 06 0

17 Years Gain. 106 12 06
17 Years Expence. 3 00 00

Neat Profit
of the Planta-
tion in 17 Years
after planting. } 103 12 6

Account of the 25 Years after Planting, or Third Cutting.

l. s. d.			l. s. d.		
Rent for 8 Years, at 5 Shillings the Acre per Annum.	}	02 0 0	Receiv'd for 19200 Ashen Poles at 10 Shillings per hundred.	}	96 00 0
Expence of Cutting 19200 Ashen Poles, 1 Man 20 Days at one Shilling per diem.	}	01 0 0	Receiv'd for ten Load of Bushes at five Shillings per Load.	}	002 10 0
25 Years Expence		3 0 0	Gain'd clear of Expences by the second Cutting.	}	103 12 6
			The Interest which might be gain'd on the aforefaid Sum in eight Years at 5 per Cent.	}	041 08 0
25 Years Gain.					243 10 6
25 Years Expence.					003 00 0
Neat Profit of the Plantation in 25 Years.					240 10 6
To which we may add the Value of the 40 Oaks then growing in the said Plantation, worth 10 Shillings per Tree.					20 00 0
In all.					260 10 06

By

By the foregoing Account we find that an *Acre* of Land, planted as I direct, may produce the Sum of 260*l.* 10*s.* 6*d.* in the space of *twenty five Years*, clear of all Expences of Planting, and Value of the Land, and the *Oaks* if they are still continued growing, will yet produce a more considerable return to the *Owner*, or his *Family* after him.

By the Example of this *Plantation*, others may be made with different kinds of *Trees*; and if the Planter has a due regard to the *Soils* proper to what he designs to plant, he may expect a return for his Labour and Industry answerable to what I have mentioned in this Account, and if his Ground happens to be already *fenced* for his Purpose, and is capable of admitting a Plough upon it, he may yet reap a much more considerable Profit from his *Plantation*.

I shall now conclude this *Treatise* with acquainting my Reader with what he is to expect in the *Second Part*; I purpose in that to treat of every thing (so far as my Experience will permit) which may tend to the Improvement of the *Partere* or *Flower-Garden*; wherein I shall first give the Explanation of a new Invention, for the more ready designing and laying out of *Garden Platts*, by which *Instrument* it will be possible to produce more Variety of *Figures* for *Gardens* in an Hours time, than we can find in all the printed Books now extant: I shall then give my Reader the best Methods of raising and propagating all sorts of Flowers: And lastly, endeavour to prescribe such Rules for the adorning of *Gardens*, as may make them delightful in every Month of the Year. And now that this Work may be the more
com-

compleat, I desire all curious Gentlemen will communicate to me what new Experiments they have made in Planting and Gardening, directed to the Publisher of this first Part, which Favours I shall gratefully acknowledge, and insert in the succeeding Sheets.

C H A P. VI.

Description and Use of a NEW INVENTION for the more speedy Designing of Garden-Platts; whereby we may produce more Variety of Figures in an Hour's time, than are to be found in all the Books of Gardening now extant.

SINCE the Instrument I now design to treat of has afforded some Pleasure to many of my Acquaintance, I have been easily perswaded to make it Publick. It is of that *Nature*, that the best Designers or Draughts-Men may improve and help their Fancies by it, and may with more certainty hit the Humour of those Gentlemen they are to Work for, without being at the trouble of making many Varieties of *Figures* or *Garden-Platts*, which will lose time, and cause an unnecessary Expence, which frequently discourages Gentlemen from making up their Gardens. In short, the Charge of the *Instrument* is so small, and its Use so Delightful and Profitable, that I doubt not its favourable Reception in the World.

But to proceed: We must chuse two Pieces of *Looking-glass* of equal bigness, of the Figure
of

of a long Square, 5 Inches in length, and 4 in breadth; they must be cover'd on the Back with Paper or Silk, to prevent rubbing off the Silver, which would else be too apt to crack on by frequent Use. This Covering for the Back of the *Glasses* must be so put on, that nothing of it may appear about the Edges on the bright Side.

The *Glasses* being thus prepared, they must be laid Face to Face, and hinged together, so that they may be made to open and shut at pleasure, like the Leaves of a Book; as for *Example*, the first *Figure* shows us the Backs of the two *Glasses*, *A* and *B*, join'd together by Hinges *C C* and *D D*, so that they may be open'd or shut to any part of a Circle; and now the *Glasses* being thus fitted for our purpose, I shall proceed to explain the Use of them.

Draw a large Circle upon Paper, divide it into three, four, five, six, seven or eight equal Parts, which being done, we may draw in every one of the Divisions, a Figure at our Pleasure, either for *Garden-Platts* or *Fortifications*; as for *Example*, in the second *Figure* we see a Circle divided into six Parts, and upon the Division mark'd *A* is drawn part of a Design for a *Garden*. Now to see that Design entire, which is yet confus'd, we must place our *Glasses* upon the Paper, and open them to the sixth part of the Circle, (*i. e.*) one of them must stand upon the Line *b* to the Center, and the other must be open'd exactly to the point *c*, so shall we discover an entire *Garden-Platt* in a Circular Form, (if we look into the *Glasses*) divided into six Parts, with as many Walks leading to the Center, where we shall find a *Bason* of an *Hexagonal Figure*. We

We may more plainly see how the *Glasses* ought to be placed upon the Design, by viewing the third *Figure*. The Line *A* where the *Glasses* join, stands immediately over the Center of the Circle, the Glass *B* stands upon the Line drawn from the Center to the point *C*, and the Glass *D* stands upon the Line leading from the Center to the point *E*; the *Glasses* being thus placed, cannot fail to produce the compleat *Figure* we look for; and so whatever equal part of a Circle you mark out, let the Line *A* stand always upon the Center, and open your *Glasses* to the Division you have made with your Compasses. If, instead of a Circle you would have the Figure of a *Hexagon*, draw a straight Line with a Pen from the point *c* to the point *d* in the second *Figure*, and by placing the *Glasses* as before, you will have the *Figure* desired.

So likewise a *Pentagon* may be perfectly represented, by finding the fifth Part of a Circle, and placing the *Glasses* upon the *Outlines* of it; and the fourth Part of a Circle will likewise produce a Square by means of the *Glasses*, or by the same Rule will give us any *Figure* of equal Sides. I easily suppose that a curious Person by a little Practice with these *Glasses* may make many Improvements with them, which perhaps I may not have yet discover'd, or have for Brevity sake omitted to describe.

It next follows that I explain how by these *Glasses* we may from the Figure of a Circle drawn upon Paper make an *Oval*; and also by the same Rule represent a long *Square* from a perfect *Square*. To do this, open the *Glasses* and fix them to an exact *Square*, place them over a Circle and move them to and fro 'till you see the Representation of
the

the Oval Figure you like best; and so having the Glasses fix'd, in like manner move them over a square Piece of Work 'till you find the Figure you desire of a long *Square*. In these Tryals you will meet with many Varieties of Designs. As for Instance, the fourth *Figure*, altho' it seems to contain but a confused Representaion, may be varied into above 200 different Representations by moving the Glasses over it, which are open'd and fix'd to an exact *Square*. In a Word, from the most trifling Designs, we may by this Means produce some thousands of good Draughts.

But that the fourth *Figure* may yet be more intelligible and useful, I have drawn on every Side of it a Scale divided into equal Parts, by which Means we may ascertain the just Proportion of any Design we shall meet with in it.

I have also mark'd every side of the fourth *Figure* with a Letter, as *A, B, C, D*, the better to inform my Reader of the Use of the Invention, and put him in the way to find out every Design contain'd in that *Figure*.

Example I. Turn the side *A* to any certain Point, either to the *North*, or to the Window of your Room, and when you have open'd your Glasses to an exact *Square*, set one of them on the Line of the side *D*, and the other on the Line of the side *C*, you will then have a square *Figure* four times as big as the engrav'd Design in the Plate; but if that Representation should not be agreeable, move the Glasses (still open'd to a *Square*) to the Number 5, of the side *D*, so will one of them be parallel to *D*, and the other stand upon the Line of the side *C*, your first Design will then be vary'd; and so by moving

moving your *Glasses* in like manner from Point to Point, the Draughts will differ every Variation of the *Glasses*, till you have discover'd at least fifty Plans differing from one another.

Example II. Turn the side mark'd *B*, of the fourth *Figure*, to the same Point where *A* was before, and by moving your *Glasses* as you did in the former Example, you will discover as great a Variety of Designs as had been observ'd in the foregoing Experiment; then turn the side *C* to the place of *B*, and managing the *Glasses* in the manner I have directed in the first Example, you may have a great Variety of different Plans, which were not in the former Tryals; and the fourth side *D* must be managed in the same manner with the others; so that from one Plan alone, not exceeding the Bigness of a Man's Hand, we may vary the *Figure* at least two hundred times, and so consequently from five *Figures* of the like Nature, we might shew about a thousand several sorts of *Garden Platts*, and if it should happen that the Reader has any Number of Plans for *Parterres* or *Wilderness Works* by him, he may by this Method alter them at his Pleasure, and produce such innumerable Varieties, that it is not possible the most able Designer could ever have contrived.

And seeing I have given such Directions in this Chapter, as I hope may inform the Curious of the Use of this new invented Instrument, I think it may not be improper to advertise that the Publisher of these Papers is provided with *Glasses* of several Sizes ready fitted up for the Experiment at the following Prices; the small sort at 3 Shillings, and the other at 5 Shillings,

Fig. I

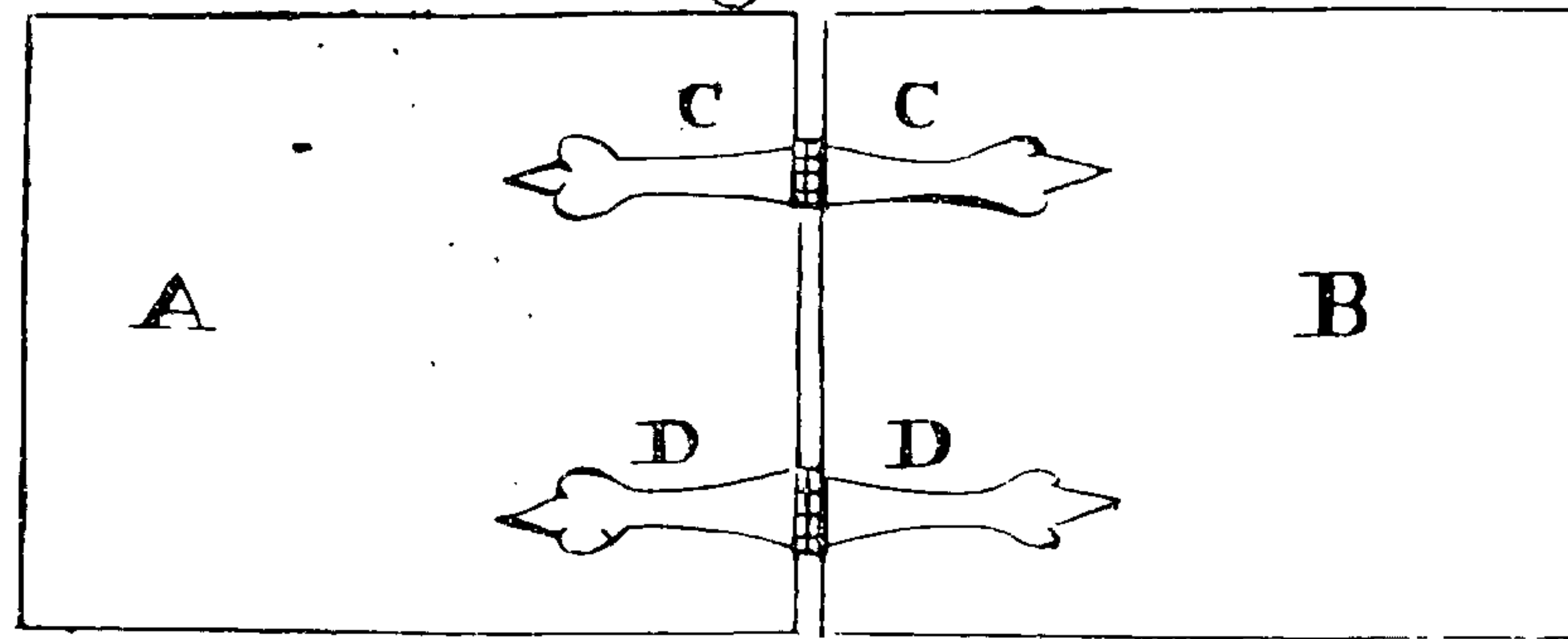


Fig. II

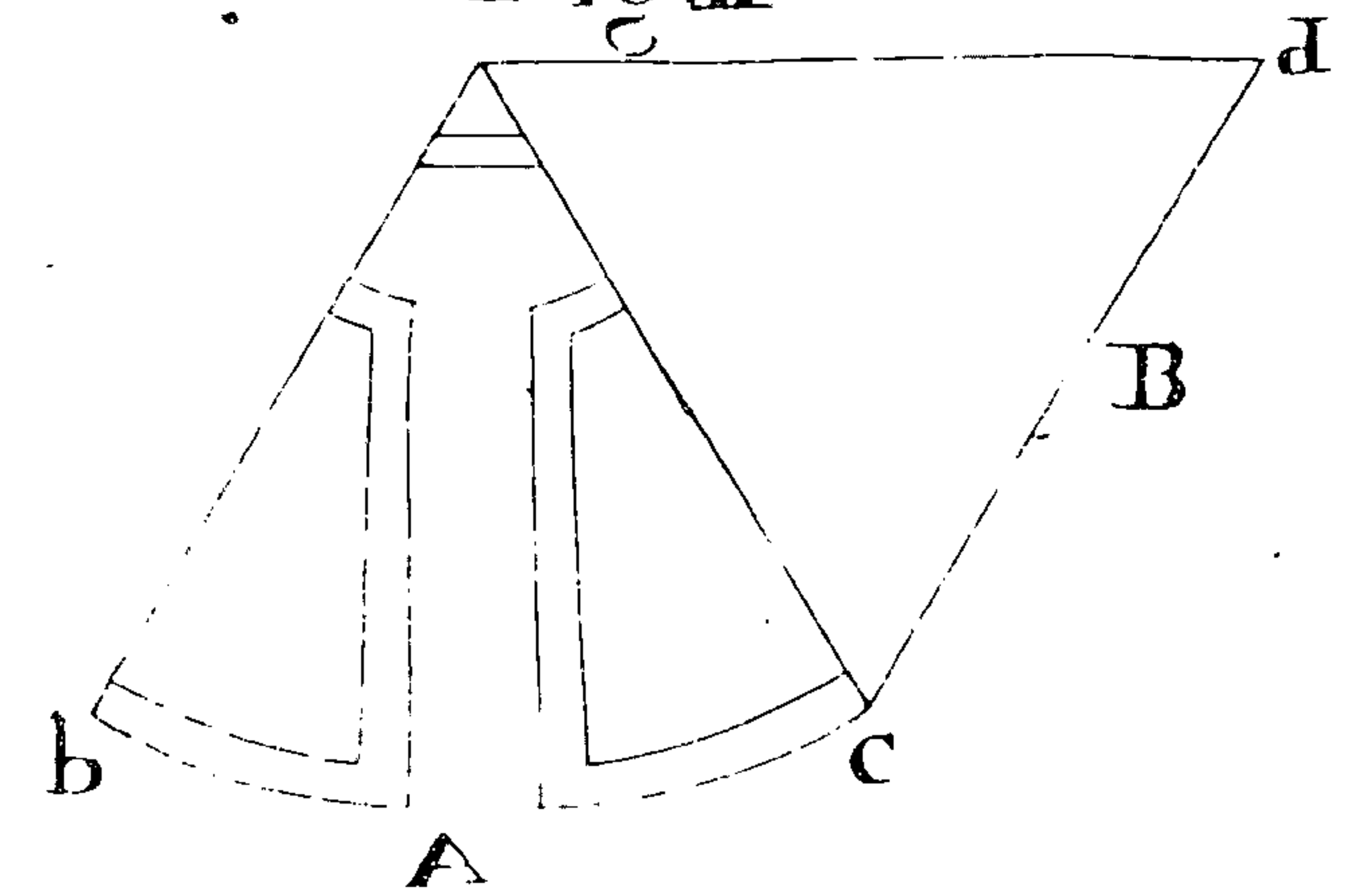


Fig. III

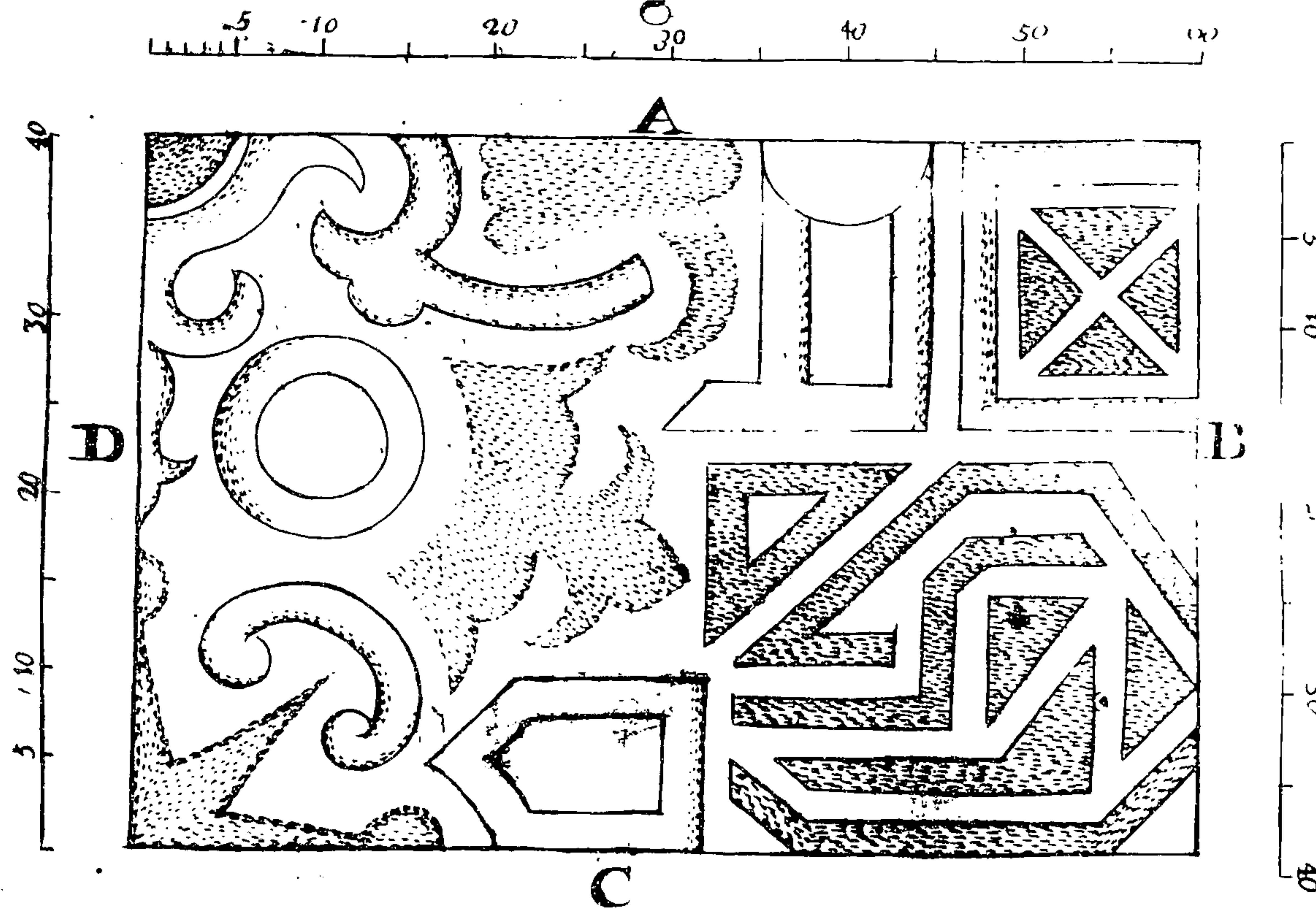


Fig. III

